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ABSTRACT

These two documents contain a variety of articles on media use in education. The first provides 16 articles that focus on justifying media programs in the 1980's. Topics include selling your program to administrators; reorganization of the Wisconsin Department of Public Instruction; video literacy; student-made videotape recordings; interactive video; helping policy makers see the need for effective media programs; cooperation of researchers and practitioners; media literacy; videotaping a health curriculum; membership in the Wisconsin Educational Media Association; free films; Cooperative Educational Service Area (CSEA) and the regional media center concept in Wisconsin; Speak and Spell; CSEA 11 Teleconference Network; and strategies for the media future. The second volume shares ideas, research, and program successes, in order to provide media professionals with strategies for doing more with less. Fifteen articles include discussions of microcomputer software on a limited budget; NASA Lewis Research Center's services to educators; designing microcomputer materials for classroom use; a team approach; multimedia story hour kits; the future as context for educational change; a student-operated radio station; imaginative gifted and talented programs; interactive media systems; interlibrary cooperation; a continuing education clearinghouse; implementing freeze-frame teleconferencing in Wisconsin, and computer education in Appleton, Wisconsin. (LMM)

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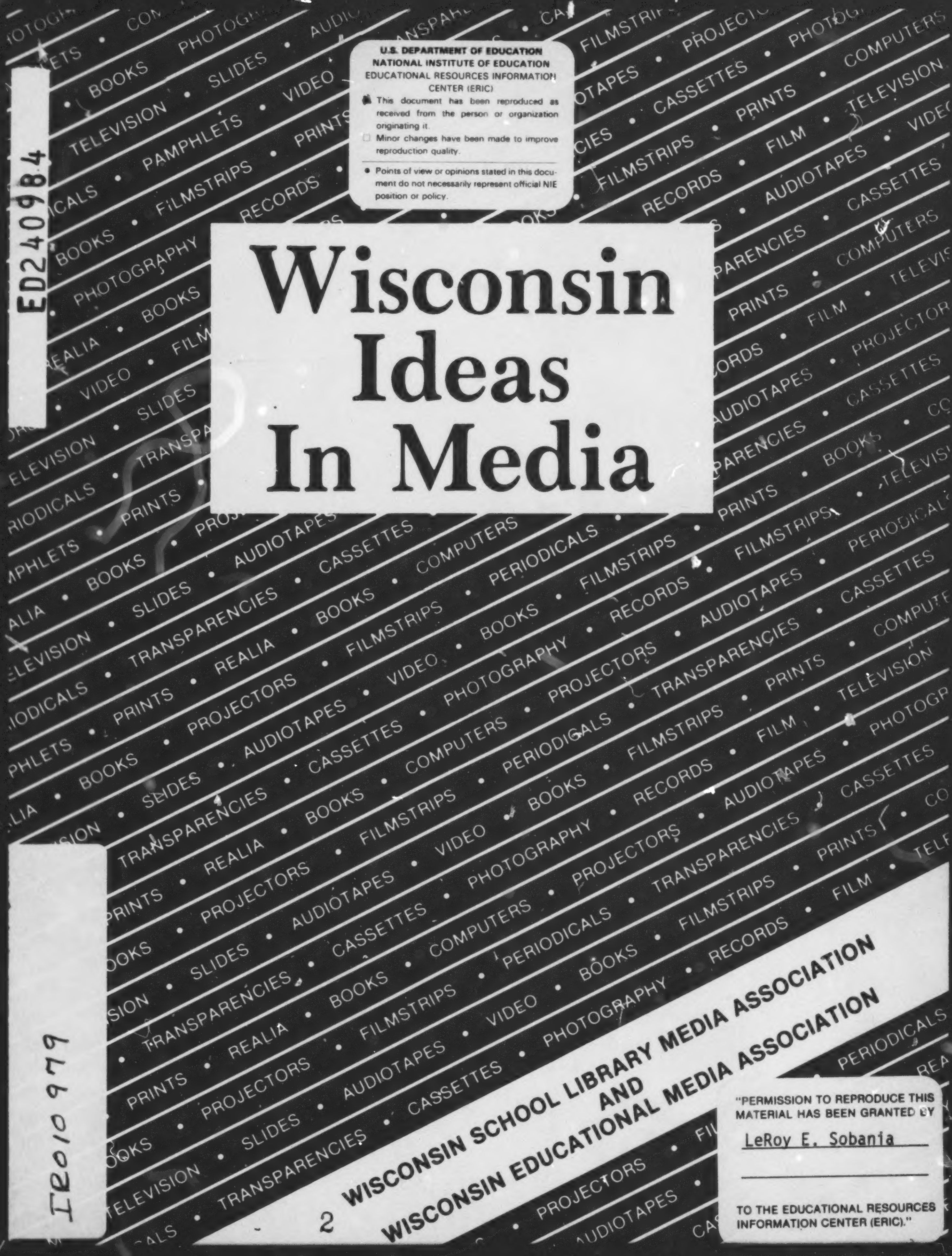

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Justifying Media Programs in the 80's

SELLING YOUR PROGRAM TO ADMINISTRATORS AND OTHERS
by Terrance J. Sheridan 3

DPI REORGANIZES TO MEET THE CHALLENGES OF THE 80's
by Leslyn M. Shires 6

VIDEO LITERACY AND PROJECT TRANS-MIT
by Randy Day 7

DO IT YOURSELF!
by Jan Koppelman 8

ITV IS OUR TWO-WAY STREET
by Garth Spees 10

IF WE DON'T, WHO WILL? OR . . . BUT WHAT CAN I DO?
by Brenda Pfaehler 12

IT IS TIME WE REACHED AN UNDERSTANDING!
Researchers and Practitioners Solving Library/Media Problems Together
by Jane Robbins-Carter 14

MEDIA LITERACY: A RESEARCH TEAM PROPOSAL
by Ronald Fingerson 16

IMC DIRECTOR FOR THE 80's 18

THE HEALTH CURRICULUM ENTERS CENTER STAGE
by Beverly L. Good & Sandy Verrill 20

MEMBERSHIP IS MORE THAN A 10 LETTER WORD!
by David Graf 22

FREE FILMS: PROBLEM OR PANACEA
by Carol D. Stanke 24

CESA 14 AND THE REGIONAL MEDIA CENTER CONCEPT IN WISCONSIN
by Rosanne Krubsack 26

SPEAK AND SPELL MODIFICATION
by David Cooley 28

CESA 11 TELECONFERENCE NETWORK
by Judith Aakre and Marilyn Van Wyk 30

STRATEGIES FOR THE MEDIA FUTURE
by Darlene Weingand 32

Bruce Dewey **Rose Holmes** **Lee Sobania**

WISCONSIN IDEAS IN MEDIA

Justifying Media Programs in the 80's

In the uncertain economic climate of the 80's, a major activity of media professionals will be the justification of our programs. In doing so, we will need to alert school administrators, school boards, legislators, parents and other taxpayers that school media programs play an important and necessary role in the learning and teaching process. The distribution of the 1982 edition of WISCONSIN IDEAS IN MEDIA to all Superintendents of Schools throughout Wisconsin supports this effort.

It is imperative that we demonstrate how the application of media technology results in the wiser use of resources. The articles gathered here reflect this awareness. Some offer inspired suggestions for affirming our programs and for increasing our professionalism. Others give the reader some practical applications of resourceful ideas. We invite you to read, react to, and to share these ideas with others.

the editors

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Selling Your Program: To Administrators and Others

by Terrance J. Sheridan
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Diminishing resources are a reality that educators must face and learn to live with. Competition for these limited resources has never been keener. This author suggests that media personnel must recognize and address several issues in order to understand and deal with our current dilemma. These issues are addressed in this paper under the following headings:

I. Develop an awareness of the current status of Education.
II. Be responsive to emerging needs.
III. Be realistic regarding needs and priorities.
IV. Develop an awareness of futurist directions.
V. Develop an accountability model for media services.

I. Develop an awareness of the current status of Education.

This will necessitate an understanding of at least three critical factors: public confidence, curriculum, and competence and accountability.

Public Confidence

One only needs to believe the media to understand that the status or image of public education in this country needs help. What is more difficult to ascertain is the degree to which the media reported problems are substantive rather than ones of confidence. Regardless, the reality is that people's faith in education as the key to economic and social success has weakened.

Further, we are not unique. Faith in our United States social and political institutions declined in the last decade. Harris Poll ratings substantiate that decline as do annual opinion polls taken by the National Opinion Research Center and the Gallup Poll.

In order to understand our current situation, we must first understand its history. Perhaps the dramatic confidence decline began in October of 1957 with the launching of Sputnik. An accusing finger was pointed directly at the system of education in the United States Education watchdog groups were formed or self-appointed. Reformers began to change the traditional system by introducing innovation. The federal government stepped in providing funds for national curriculum study groups and a host of other national welfare oriented issues in an effort to upgrade the education of the socially and economically disadvantaged.

School finance became a major issue. Changing lifestyles and improved birth control techniques brought an end to the baby boom and, while enrollments declined, the cost of education escalated. The percentage of adults without children in school increased from less than 50% in the 1950s to an estimated 72% currently. With less than one-third of adults having children in school we must recognize that education has become a minority activity.

Test scores, primarily college entrance scores, declined with enrollments and the public continued to ask "what's happening?", "what's wrong with education?", "what are you doing with all my tax dollars?" Public demand for answers increased and some of the answers were not good.

Unquestionably, education has become front page news. Educators are faced with the need to communicate. So, what are the issues we need to communicate about?

First, we must recognize and truly believe that of all the institutions that our government has created, the most noble and beneficial to both the individual and society, has been the public schools. Eighty-two percent of respondents to the 1980 Gallup Poll indicated that "schools were extremely important to one's future success." The recent highly publicized and controversial Coleman Report above all shows that schools do make a difference; a finding which clearly refutes the basic message of earlier Coleman Reports.

Second, we must understand that the result of abandoning public education as the escalator of upward mobility will be to create a stratified, classbound society ruled by a self-perpetuating power elite of economic and social privilege. Such a situation will mark the end of the road that was opened by Jefferson when he called for a new aristocracy of talent to replace the old aristocracy of power. Part of our task as educators in restoring public confidence in education is to make the general public aware of this threat.

Third, we need to discuss our problems openly and objectively with our publics and to accept appropriate responsiblity for resolving them. First, we denied that students weren't doing so well; then we looked for external reasons; now we are facing up to what we need to do about it.

Fourth, we need to communicate with our publics (not just parents) regarding the positive accomplishments of public education. That may mean we will have to create the news since we can't expect reporters to come in and find out about the good things. If test scores improve or discipline is better or the dropout rate goes down, we will have to assume responsibility for seeing that the media gets such news.

There is an old saying among more cynical politicians that a democracy reflects the worst government a people will tolerate. This maxim may be applied to schools. When parents and the general public demand standards of excellence in their schools, and when they are willing to back that demand with full support **of** and involvement **in** their schools, then educators will know that nothing less than the best is acceptable. If, however, demands are minimal and scant support is provided, the future of public education will be dismal indeed. In short, it is we who determine the future of the schools.

Media personnel are naturals for designing means to assure that the good news of success is presented to the public. Accept that challenge and initiate some small action in your system to accomplish it.

Curriculum Development

The locus of responsibility for curriculum development has changed considerably in the last 80 years. Prior to 1900 state education authorities prepared and approved lists of subjects to be taught in public schools in their states. Elementary subjects were divided into skills and content. It was believed that when students had mastered the skill subjects (reading, writing, mathematics) they had the skills to master the content subjects (geography and history). Few differences were found in the list of skill subjects prescribed by the various states; however, there were some differences in content subjects.

From 1900 to 1930 the published courses of study issued by the states for elementary public schools changed very little; however, the actual curriculum changed markedly in those schools that adopted new textbooks and methods. Slowly, from 1930 to the present the curriculum of the elementary school became a combination of nationally published textbooks and locally developed courses/materials based on educator ideas or pressure group influence. More recently, the elementary curriculum has been augmented by a host of print and non-print resource materials.

The early secondary school curriculum was determined not so much by state courses of study as by the views of college leaders about the subjects essential for college. The first expansion of this came in 1917 with the passage of the Smith-Hughes Act. It was expanded further as unemployed youth stayed in school during the 1930s, but was shelved with the surprise attack on Pearl Harbor. For a dozen years after 1946, secondary school curriculum was developed in response to well-intended pressure groups. The launching of Sputnik in 1957 brought about federal involvement and during the 15 years that followed, more than $100 million was expended by the federal government in what was called Course Content Improvement Projects designed to update the content of the curriculum. The 1970s brought a general refuting of the "new curricula" and a strong push for "return to the basics."

The major lesson learned over this 80 years is that the most effective curriculum development is accomplished within the local school district where the teacher, student, and parents are located. Another lesson to be learned is that we cannot divorce curriculum from subject matter. The idea that process is more important than content has infiltrated practically every field of study. The results of substituting "socializing" for substance are all around us. Too often the disciplines have simply been swallowed up in process and time-on-task has been absorbed by socializing and quasi-administrative tasks. Students can explore the process of social studies and emerge without knowledge of their own country. Even if we accept that process in many subjects is part of the content and by no means useless, it should not replace subject matter. Socializing is an important goal of the school; however, it should be a product of how we operate our schools and relate to others as opposed to becoming the substance of the curriculum.

If teachers are the curriculum developers, they must have the expertise to handle content as well as skill and process. Unfortunately, the information base needed to design content curriculum has not been provided in too many pre-service teacher training programs. Teachers need the support and assistance of media resources in the development, content selection, and effective implementation of curriculum.

Competence and Accountability

These two buzz words abound in the professional literature, legislative halls, media, and public discussions. Fifteen states have passed teacher competency laws which mandate testing for licensure. Thirty-nine states have passed accountability laws, most of which require student testing and competence. The recently passed Wisconsin law, while voluntary, includes a requirement for the state to develop items for basic skill competency tests. We can expect further legislation in this area.

So how do we respond? First we must accept and meet the challenge of professional competency. As long as the expectation is realistic we should have nothing to fear. Second, we must accept the challenge of accountability; however, we must assure that such responsibility will be shared with appropriate parties and institutions. To do less is to invite continued criticism, educational malpractice litigation, and voucher legislation.

The concept of shared accountability necessitates that we re-examine the role of school, family, church, and community; identify which is appropriately responsible for each of the variables that impact on learning and hold each accountable for the accomplishment of their assigned responsibilities. To do less is unfair. It is an impossible task to expect teacher accountability when accountability is defined as an expectation that all students will achieve at a given level, given "X" amount of time, and "X" amount of resources. That to me is simply an impossible expectation to lay on anyone when the variables that impact on the process are not completely controlled by the institution or the person being held accountable.

Awareness of the current status of education provides a basis for determining your role in assisting the system in meeting its needs. Your role must be based on an understanding of how you as a service component, fit into the accountability and competency movement, that you demonstrate how you can make a contribution in increasing achievement, developing computer literacy, meeting the needs of high achieving students, providing appropriate input into curriculum development and implementation, and/or providing assistance in addressing the confidence problem.

II. Be responsive to emerging needs

Business as usual will not suffice. Initiative must be exercised in expanded service areas. This may include:

- Providing specialized production work for curriculum and/or district presentations.
- Rebroadcasting ITV programming to accommodate scheduling of basic curriculum.
- Providing resource packets and/or mentor assistance for high potential students.

- Teaching and/or reinforcing study skills in addition to basic library/media skills.
- Providing leadership in implementing computer education.

III. Be realistic regarding needs and priorities

- Recognize that additions in one area must usually mean reductions in another.
- Expand use of existing resources by interlibrary loans, coordinated scheduling, shorter down time, and rebinding.
- Base material selections on objectives of curriculum, stand firm on unreasonable censorship attempts but don't hesitate to attempt to find non-objectionable alternatives to locally sensitive issues.
- Absorb the functions of satellite resource centers. (Declining enrollments or decreasing funds may necessitate closing them.)
- Recognize that tasks such as inventory lists, bibliography preparation, and shelf maintenance may have to be adjusted to new priorities.
- Recognize that public policy will dictate that regular curriculum instruction will be maintained at the expense of whatever support services must be adjusted; however, some support services can only be limited to a certain degree without severely decreasing the effectiveness of the regular classroom teacher.

IV. Develop an awareness of futurist directions

The post-industrial society work force is projected to change in the next two decades. While the percentage of the work force engaged in agriculture, industry, and services will decrease, there will be an increase in information and education. Information and knowledge are becoming the critical new factors in economic growth. In the next two decades librarians will increasingly be known as "information scientists;" books will be published on computer tape; the card catalog will be on a video display tube; we'll refer to the library's "data base" which will be available instantaneously from practically around the world, and magazines and newspapers will be on electronic media as will reference sources. Computerized information, interactive TV (which will be a common learning and use tool), micrographics (25¢ book), and other computer revolution innovations will shape the library of the future. Librarians must be ready for this. Since much of what is available in libraries will be available in videotext at home, libraries probably will not compete with private suppliers for that market. They will divert their energies to the information poor segments of society, and will also become conservators of the cultural and intellectual record. Many will become self-employed information brokers who cater to a specialized clientele.

V. Develop an accountability model for media services

This should include at least the following elements:

A. Identify those services you will provide as well as those skills or concepts which you will teach and have them validated by the system. (Don't work hard doing those tasks which the system does not value.)

B. Provide instruction/services in a professionally competent, intellectually honest manner.

C. Assess the results. This will necessitate, at the minimum, teacher feedback, student feedback, and data relating to the impact of service/instruction on student achievement.

D. Make corrections or changes when necessary.

E. Report fully and accurately on the results.

This is our challenge. The future of public education as we know it in this country may well depend on how well or "if" we meet the challenge. I respectfully request that each of you commit your individual and collective energies to that end.

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DPI Reorganizes to Meet the Challenges of the 80s

by Leslyn M. Shires
Assistant Superintendent
Division for Library Services
Wisconsin Department of Public Instruction

Library and information services have traditionally been designed along well-proven lines. The present reality, however, is that the world is changing--rapid technological advances and the continued information explosion have put new demands on libraries of all types, especially instructional media centers. Computer technology, online catalogs, satellite delivery systems, cable TV, electronic mail, and interactive audio and video are just a few of the technological developments that instructional media specialists will have to become knowledgeable about and develop skills to use.

As a result of the recent reorganization of the Department of Public Instruction (DPI), the Bureau of Instructional Media Programs was renamed the Bureau of Instructional Media Programs and Educational Technology. This name change reflects a new emphasis in providing leadership and consultation in areas of telecommunications and computer applications.

With 85 percent of Wisconsin school districts possessing at least one microcomputer for classroom use, State Superintendent of Public Instruction Herbert J. Grover had wide support for creating an instructional computing position within the Department. This new position, with an emphasis on computer applications for instructional purposes including selection of microcomputers and microcomputer programs, will be housed in the Bureau for Intructional Media Programs and Educational Technology.

Automation of library operations has become increasingly vital to improvement of services, resource sharing, and curtailment of costs. The Department of Public Instruction/Division for Library Services (DLS) has become aware of and involved in library automation projects currently being carried out at both the state and local level.

In order to encourage resource sharing, the Division is presently developing a statewide data base of print and audiovisual materials. The data base will be useful for identifying which libraries own specific titles or information on certain subjects needed by students and teachers. A software program is currently being developed to make possible the use of microcomputers for data entry to allow participation by schools, small libraries, and special libraries not in the Ohio College Library Catalog System (OCLC) or not having other computer files of their holdings.

The responsibility for the overall leadership and coordination of telecommunication efforts at DPI has been transferred to Ralph Whiting. This includes broadcast TV and radio, satellite and microwave delivery systems, cable TV, electronic mail, and interactive audio and video. Special emphasis will be placed on coordinating and facilitating DPI involvement with ITV/radio programs. The position is funded jointly by the Educational Communications Board and the Department of Public Instruction.

Another initiative of the Department of Public Instruction to provide leadership and consultation in educational technology is through the Department's participation in Project BEST--Basic Education Skills through Technology. The project, funded by the U.S. Department of Education, is designed to provide state education agencies with training materials and practical experience in the use of microcomputers, electronic mail, teleconferencing and related video technologies, all for the improvement of basic skills education.

Each participating state is required to have a state team develop a plan of activities compatible with the national level objectives which are as follows:

- to share information and experiences regarding the use of microcomputers in instruction among state education agencies.
- to promote coordination of efforts regarding the effective use of microcomputers within state education agencies.
- to provide a model for future cooperative efforts using telecommunications technologies.

Dianne McAfee Hopkins, director of the department's Bureau of Instructional Media and Technology programs, has been selected to coordinate Wisconsin's participation in the 21-month program. She and her team members are working with other states to create a national network that will encourage the exchange of ideas, people and information. The information learned will in turn be communicated to local school districts.

In June, each of the 43 participating states held kick-off conferences to acquaint representatives of education associations and universities with the project. The conference began with a live national telecast featuring U.S. Secretary of Education Terrel H. Bell, members of his staff, and leading national experts in instructional technology.

Following the telecast, conference attendees discussed how Wisconsin education can benefit from Project BEST. The emphasis was on the sharing of information among school districts with the Department of Public Instruction providing the leadership. In the coming months the Project Team will finalize Wisconsin's plan and submit recommendations to the State Superintendent's Office. It is anticipated that a plan of action for the team will be approved by early fall.

The Division, along with the University of Wisconsin-Madison School of Education and the Library School, has supported the Cooperative Children's Book Center (CCBC) since 1963. The Book Center's collections support learning and reading resources related to children's literature. Workshops, programs, and public lectures on children's literature topics are held in the Center and throughout the state. In reviewing the activities and function of the DLS Children and Young Adult Services Consultant during the reorganization process, a decision was made that linking consultant services to the Center's book collection would reduce duplication and provide a more innovative approach to serve instructional media specialists and librarians. Therefore, funds have been transferred to CCBC to support a part-time outreach librarian position. This change will make it possible for the Center to provide more workshops and programs throughout the state.

The Division will continue to plan and coordinate the summer reading program.

These new thrusts added to the Division for Library Services, and particularly to the Bureau of Instructional Media Programs and Educational Technology, will provide the leadership and coordination necessary to realize the maximum benefits of technological developments for all Wisconsin's instructional media centers in the 80s.

Video Literacy and Project TRANS-MIT

by Randy Day
Gresham High School
Gresham, Wisconsin

Four years ago, Dean Markwardt, Coordinator of Learning Resources at Marshfield Public schools queried about visual literacy and how it applies to viewing television. He then formalized an idea about using instructional television more efficiently and effectively. Today, after an Elementary and Secondary Education Act (ESEA) Title IV-C Planning Grant and a three year Innovative/Exemplary Grant, two very thorough curriculum guides are available.

The project was called TRANS-MIT (Technology as a Response to Actual Needs -- Maximizing Involvement in Television). I directed TRANS-MIT for three and one-half years and must admit to learning an incredible amount about TV, TV production, curriculum, teachers and students. Dean, Glen Wolfe, then of UW-LaCrosse, Ralph Whiting and Nancy Scott of the Department of Public Instruction Title IV staff, Dr. Dick Hammes of UW-Oshkosh, Karen Steen and myself were involved in brainstorming, trying, testing, re-writing, revising and trying again to make the things happen which we thought should happen.

The most dramatic and enthusiastic aspect of TRANS-MIT was involved with a TV production curriculum. The fantastic part of the curriculum is that we developed it with fifth and sixth graders. **VIDEO LITERACY: A BASIC TELEVISION PRODUCTION CURRICULUM** began with the psycho-visual process, developed by Glenn Wolfe. Beginning with the mind and the eyes and the motivation for looking at objects with different perspectives, Glenn started us on our way to developing a vocabulary to teach students which resulted in some award-winning television productions. **VIDEO LITERACY** is based squarely on the premise that knowing "how" television is produced will enhance viewing skills -- perhaps make the viewer more active, less passive. Perhaps **VIDEO LITERACY** will open doors to kids with visual skills and talent. We did not try to prove these concepts -- all we have is visual evidence that kids "can do" when it comes to video -- more importantly they WANT TO! Imagine a school with a student-run production company developing not only entertainment but instructional TV as well!

It is difficult to describe the enthusiasm of the kids and the swiftness of mastery when given the equipment and instructed in the process. We did not hold back on letting the kids handle the equipment. They created their own questions and found problems and solutions far quicker than the "lecture first for endless hours" approach.

TRANS-MIT also produced **VERY FINE TUNING** for teachers. **VFT** is really a planning guide which should help make better use of TV resources. With it, we were able to encourage a reluctant group of volunteer teachers to grow from three to twenty-six. Everything they did meant work, yet their numbers continued to grow. The number of ways and reasons for applying the suggestions in the guide was truly amazing, and the student response was clearly positive.

In all honesty and candor, the results of TRANS-MIT do respond to needs, and do maximize involvement in television. It does capitalize on TV technology and provides a wealth of possibilities at the spin of the dial. Although TRANS-MIT is not being "officially" disseminated (as they say at Title IV). I am, however, making it known that the final product, which was assembled by Karen Steen, a Media Specialist for Marshfield Schools, is complete - looks great, and **WORKS**! I'm hoping you may choose to avail yourself of our "beginning," see if it fits your needs, and let us know what you think. If you want to know more, contact Ralph Whiting at the Bureau for Instructional Media Programs and Educational Technology, Wisconsin Department of Public Instruction.

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Do It Yourself!

by Jan Koppelman
Media Director
Viterbo College
La Crosse, Wisconsin

"How are you feeling this morning, Ms. Williams? Did you have any problems sleeping last night?"

"But Alex is involved with Susan and I'm having his child!"

"Pet Paradise offers you these special prices on a wide selection of tropical fish for this week only!"

"What is the motivation for these actions? Why did Hardy have Angel react in this way to the revelation that Tess has just made?"

"And-a-one-and-a-two-and-a-three-and . . ."

These are not clips caught from commercial television as a bored viewer flips from channel to channel to find a more interesting program. These are some of the sounds that can be overheard from the hallway outside of Studio A at Viterbo College. These are excerpts from video tapes made by students for a variety of courses ranging from nursing to advertising, and from education to conducting.

Video taping has become a useful tool in a variety of classes at many colleges and the same is true at Viterbo. Instructors know they need to get their students more actively involved in their own learning processes. They acknowledge the fact that students need to practice and refine the skills that are discussed in class. Students also need to be encouraged to work independently, and to develop self-confidence as well as self-evaluative skills. The use of video tape can be a step forward in helping to achieve all of these ends.

Of course the idea of video taping students is not new. Most colleges and many high schools have the necessary equipment and personnel to video tape students and faculty in classroom situations. Many colleges and high schools even have a facility for video taping students in a studio setting, make-shift as it may be. The experience of being evaluated on the basis of a review of a video tape has been acknowledged as an extremely useful tool for both faculty and students. But we have found at Viterbo that the actual experience of handling the equipment while making the video tape can be valuable as well.

In the past, when a faculty member wanted a video tape made of an individual or of a group of students, the time and location was arranged with the Media Center. A staff member (me or my assistant--there are only two full time staff members) would then be assigned to take the equipment to the designated classroom, set it up, and operate it. In many cases this was less than satisfactory. First, it took up a good deal of precious time for the staff member. Secondly, the students were nervous enough giving their presentations or conducting their interviews, or whatever it was that they were doing, without having to deal with the perceived threat of the camera operator and the mysterious equipment. However, the idea of using video tape with students continued to increase in popularity among our faculty.

As a Media Center in a small, private, liberal arts college with a student population of about 1000, we found our funds, personnel, and facilities were too limited to handle effectively the increased use. So when more and more faculty members showed an interest in having their students video taped, we had to do some serious rethinking of the procedures that had been adequate in past years. Faculty in the Education Department had used video tapes of micro-teaching and student teaching experiences for several years. Occasionally, the speech classes would request a video tape of student speeches. But beginning three years ago the Nursing Department at Viterbo College, which accounts for a large percentage of our full-time student population, began assigning the junior nursing students to do a simulated patient interview that was later to be evaluated by a member of the nursing faculty. We were informed of that decision during the first week of school; the simulations were to begin within a month. Suddenly faced with the task of helping nearly 100 students do three ten-minute simulated patient interviews each semester, we spent the first few weeks in a panic trying to schedule the video taping whenever we had time that coincided with the students' schedules. This approach proved to be totally inadequate. After a good deal of frustration, thought, and discussion with a number of the students and faculty involved, we finally came up with the following changes that satisfactorily resolved our problems of space, scheduling, and time.

The only facility we had available to us for "studio" video taping was our loosely structured "production" room which was already used extensively for purposes other than video taping. We had one camera and one large video cassette recording unit available that could be set up for the purpose of making these video tapes. Our other video cassette recording units were already heavily used. Our immediate, but temporary, solution to the problem of space was to install a curtain that created a divider for the studio. This gave the students some privacy, but we were unable to use the production room during the taping sessions. By the following summer a permanent environment was established. We were able to have our large open production area divided into two smaller rooms. One remained the production room and the second area became our "studio", a room with carpet on the floor and a moveable divider wall. This divider allowed the room to be sectioned off as two smaller studios. We could now use our production area and both studios simultaneously. Although this was a fairly simple arrangement, it was a significant improvement.

Now we faced the problems of scheduling our time and organizing some 300 interviews in the course of a semester on top of all the other tasks that we were expected to perform as usual.

The problem of expending so much of our time in the fairly routine task of video taping the students was resolved by training the students to do it themselves. This was no small task. The nursing students met in a large group lecture section once each week, and we were able to give them a one-time large group instruction session on the basic procedures for operating the equipment. To reinforce this large group instruction, a photographic display, kept next to the equipment, depicted the step-by-step procedure for making the video tape. This was done using close-up shots of the equipment pointing out specific parts of the equipment. This display was kept as simple and uncluttered as possible while still attempting to be very specific so that the students would have little trouble following the directions.

Once the students were trained, there were few limits on the scheduling of studio time. We were able to allow students to schedule their simulated interviews during most of the hours that we were normally open. This provided for a great deal of flexibility despite the number of interviews that were scheduled. We developed a reservation sheet at the beginning of the semester with 30

Viterbo studio/production room with step-by-step photo display for self operation

minute time slots ranging from 9 a.m. to 4 p.m. and also during our evening hours. Students came in to sign up for a reservation in advance. When they arrived at the appointed time, a video tape was checked out to them as if it were a library book. They made their recordings, took the tape with them to their instructor in the Nursing Department who reviewed it with them at a location in the Nursing Center. Subsequent interviews were put on the same video tape during that semester. At the end of the semester, the video tapes were returned to the Media Center to be erased and reused for the following semester.

The first time students came in to make their video tapes we reviewed the procedures with them, individually, since most of them lacked the self-confidence to operate the equipment. However, after a few sessions, the students knew the operating procedure well enough to work on their own with the help of the photographic display. A staff member was always available for help if that became necessary.

We found that by following this plan we were free to devote more of our time to other tasks, and in addition the students were able to develop a sense of self-confidence and independence in working with the equipment. They became responsible for this part of their learning, and they experienced success. They were no longer intimidated by that mysterious equipment. For our students it has created the feeling that, "I did it myself; I know now that I can do it, and I can do it again!"

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ITV Is Our Two-Way Street

by Garth Spees
Media Specialist
Oshkosh West High School
Oshkosh, Wisconsin

We are all faced with declining enrollments and the problem of reduced budgets. This is often accompanied by forced cuts in class offerings.

In Oshkosh, we found a partial answer to these vexing problems. In the spring of 1981, when self-scheduling was completed, we found that only 17 students at West High School and only 8 at North High were enrolled in French II. Neither school had enough students to hold a class. Similarly, the economics class at West High had 20 students while North High, with only 4 students enrolled,would be forced to drop that offering. When 2-way Instructional Television (ITV) was suggested as a means of salvaging these classes, the administration granted approval for a two week pilot study. Some borrowed equipment, and some owned by the district was rounded up and hooked together by the two district AV technicians. Following the pilot study, the administrative evaluations resulted in a go-ahead for the use of an interactive TV system.

To implement the full program, the following equipment was ordered: 1 color TV camera (we already had one) and two each of modulators, processors, and converters. In addition, we ordered two lapel microphones, four classroom response microphones, two mixers, two tripods, plus cables and connections. By using some already existing equipment, we completely outfitted both schools for a cost of $11,400.00. The equipment was built into two large TV carts, one to be located at West High School and one at North High. Each cart was to have a 25" color receiver on the top shelf and a classroom black and white 23" receiver on the second shelf. The mixer, modulator, converter, et al, were carefully fitted onto the bottom shelf. Only the camera and the microphones were not on the cart.

Student camera operator at West High School

The Media Center (mainly the AV Specialist) was responsible for insuring the usability of the equipment as well as for training student camera operators. We were called on to correct small problems with the equipment, such as switches turned off, out-of-tune receivers and color balancing. Although most problems were minor and solved quickly, a feedback problem persisted. This we finally corrected by patching the audio through the color receiver and out to a separate speaker mounted high in the front of the classroom **behind** the microphones.

The equipment used: Everything but microphones and the camera built into one cart

By using ITV, teachers were able to conduct a class in one building while at the same time being viewed by a class in another building. A 2-way capability allowed immediate interaction between students and teachers at both locations. Most of the students at the remote locations would rather have had a "live" teacher, however, several of them pointed out that ITV was better than having no class at all. In fact, the loss of person to person contact was somewhat compensated for by careful placement of camera and monitor. This made the students feel that eye contact was still there. The happy outcome of the use of ITV in this instance was the survival of the class offerings at both school locations.

Although this method of teaching may not be everyone's cup of tea, our people came to enjoy the challenge. A key to success in our first year's attempt at interactive ITV was the resiliency and enthusiasm of the two teachers involved. The loss of spontaneity; i.e., the inability to walk over to a file and pass out an outline, summary, map or exercise, was overcome through careful planning. Similarly, scheduling differences between the two schools were resolved. The apparent success of these efforts is the fact that **four** classes will be taught next year using the interactive ITV system. School systems facing possible reductions in classes and staff may well consider implementing interactive ITV.

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If We Don't, Who Will?
Or...
But...What Can I Do?

Brenda Pfaehler
Laison to the Educational
Communications Board
Wisconsin Department of
Public Instruction Madison, WI

. . . . "You know, I really shouldn't get involved in this; it would appear self-serving and my co-workers wouldn't like it . . . . and besides, I don't know how" . . . .

But the fact is that no one understands more the importance of media programs and their revelance to quality instructional experiences for our children than you do! You are the expert, the person most able to help policy makers understand the continuing need for well planned, quality instructional media programs.

We are all well aware that these are austere fiscal times causing school boards, faculty committees, administrators, legislators, state and federal agencies to look for those areas where cuts might be made. Usually they look for areas where they can save money with the least impact while providing for quality educational experiences. It's all too tempting to cancel subscriptions, to not order new books, filmstrips, TV monitors, and other essentials of quality media programs, and even more devastating, not to offer contracts to media personnel.

You really cannot fault opinion leaders, policy and decision makers for being tempted to make such cuts if they are not fully informed how important instructional media is to quality instructional programs. They must understand that instructional media programs are an integral part of quality instruction, not fluff!

Instructional media programs in austere times can, in the long-run, actually save school districts money because they are cost effective methods of teaching, enthralling our children with the outside world.

It is our job to let other leaders know and understand these points, but how? Let's examine several rules, ideas and methods which we might use to help us get our message across.

Let's begin by looking at three simple but important rules. If you have teenagers, you'll find that this story about a sixteen year old girl, used to illustrate these points, will be all too familiar. During the past winter as she woke her mother each weekend morning, she'd say "Mom, it's 5 A.M., it's 10 below zero and time to drive me to the skating rink. But, Mom, you know if I were able to drive, you wouldn't have to get up and go out into the cold." She made her desire and wish relevant in a very personal manner to her parents; we must do the same with our instructional media programs. **Rule number** 1. Policy-makers need to know just how important those programs are to their self-interest: quality instruction for our children.

Throughout the entire year before the teenager was sixteen, literature appeared on the refrigerator door, by the phone, next to her parents' favorite chair, citing the relationship between well trained teenage drivers and low accident rates, as well as other positive information regarding teenage drivers, dispelling myths and providing educational background. These articles were often written by well-known authorities. She slowly, routinely, was educating her family *prior* to her need for our consent for her to drive. She followed an important **second rule** -- educate first, then motivate. You cannot successfully do both at the same time.

And motivate she did. At a family dinner on the occasion of her sixteenth birthday, relatives were gently asked to relay stories of those days gone by when mom and dad were young and just driving. Grandparents, aunts, uncles joined in gleefully reminiscing. **Rule number three,** enlist those persons most likely to influence opinion makers to support your programs, preferably through direct personal contact.

Fortunately, we have more than refrigerator doors and chair-sides at our disposal to help disseminate background information. Let's see how we might provide information,to educate before we motivate,to help opinion-makers personally identify with the importance of our media programs.

Letter Writing

A very effective, inexpensive method of contact is letter writing. Legislators, state agency personnel, school board members, all want to know what you feel, what you believe to be important and why. Some cautions are necessary, however. If you are writing letters on official letterhead, be sure that your message is consistent with the policy of your school or organization. If not, write on plain stationery as any citizen may. Also, never surprise your administrators or organizational officers. Let them know what you are writing before you mail your letter. Their support is a true asset to you.

When you write letters make sure that all parts of the address are correct. In the first paragraph, make your point in a clear, concise, positive manner. If you are writing about specific legislation, policy, or board action, mention it and state whether you are for or against it and why it affects you personally. You might also state how your position effects children, education, the policy -maker. In addition, you should:

— Try to limit letters to one page (one side only) and then include any attachments necessary which support your opinions. Be sure to include your return address and a phone number where you may be reached.

— Write sincere letters in your own style. These will have a greater impact. If you write often, don't forget to write complimentary letters as well as letters of complaint or concern.

— Know both sides of the issue and use pertinent facts to support your position in as unemotional and courteous a manner as possible.

When writing letters to the media, follow the same suggestions. Be sure that your writing is well organized, contains short sentences, clear facts and once again, place the important facts first. Before you send such a letter, be sure to check the rules for submitting letters for each newspaper or magazine.

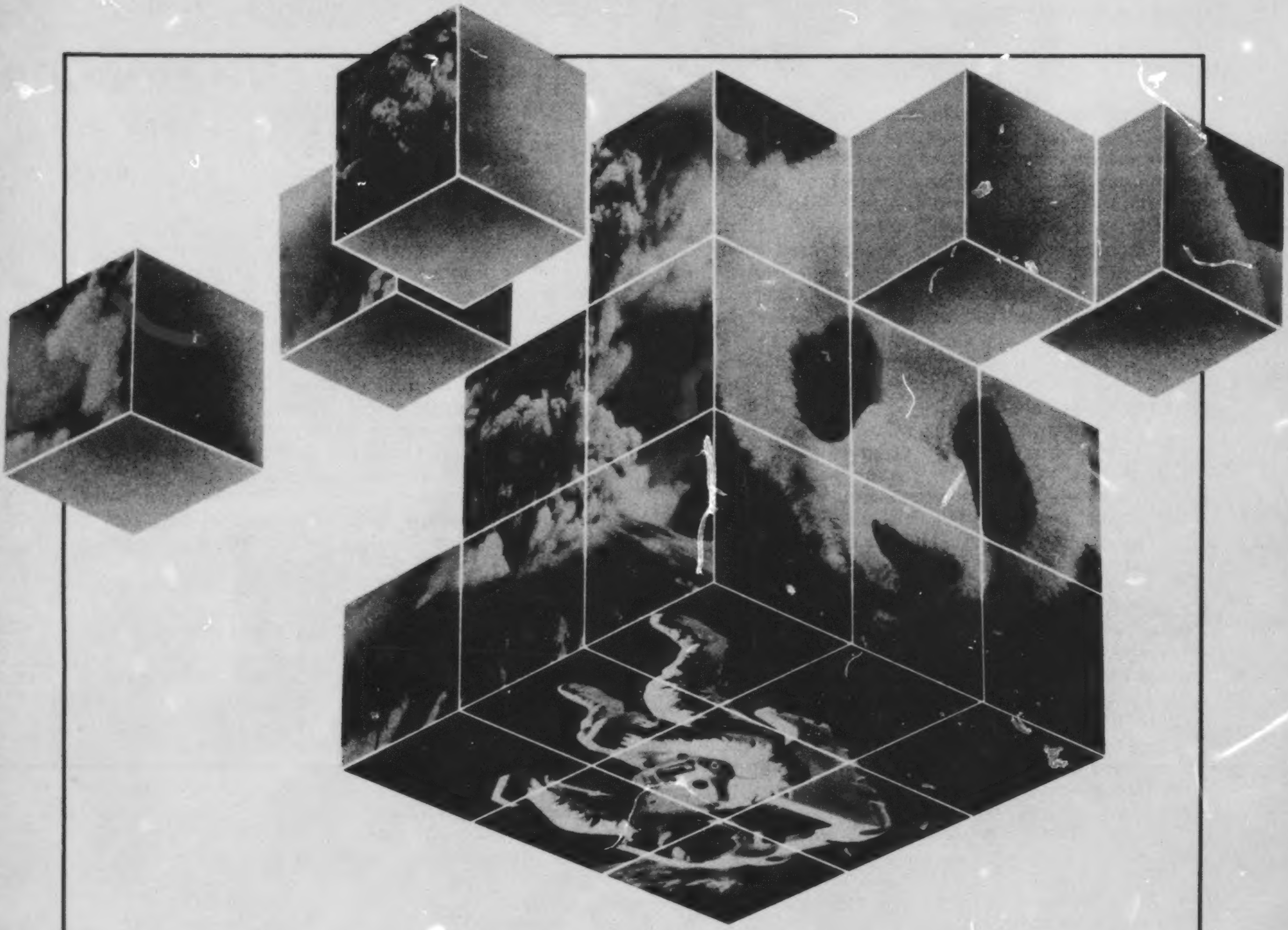
You may even wish to write more than a simple letter. Many publications, as well as the electronic media, will accept guest editorials. Once again, find out the rules first. As experts in instructional media, you should find this avenue a natural.

Personal Contact

Personal contact is important, too. Most public officials relish such contact for it is through you that they are able to get a feel for the pulse of the people, to learn what impact their policy-making, decision-making is having. You are important and officials are real human beings who care about you.

Try to establish the opportunity for friendly interchanges which will make the most of the short time available. In order to do this, prior to your meeting you should gather as much background information on the

Continued on page 15



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It Is Time We Reache
Researchers an
Library/Medi

by Jane Robbins-Carter
Director, Library School
University of Wisconsin-Madison

Too often practitioners and researchers in the library, media, information field (hereafter referred to as the information field for brevity's sake) do not communicate successfully. Most practitioners and researchers will agree that the purpose of information research is to contribute to the body of knowledge which will ultimately allow information services to be delivered more effectively and/or efficiently. Further, they will generally agree that "good" research is able to fulfill this purpose; however, many factors militate against the development of sufficient knowledge about and understanding of information research to allow meaningful communication between the two groups to take place. Some of the key militating factors are:

1) information researchers too often identify problems worthy of being solved by talking only with other researchers, ignoring or overlooking the importance of identifying problems to be solved with practitioners;
2) practitioners too often cannot identify researchable problems when requested to do so;
3) researchers too often use language when communicating with practitioners which is not understandable to them;
4) too few practitioners have any training in the research process and are therefore unable to utilize research findings which would be applicable to solving their problems;
5) researchers too often write for and publish their findings in reports and journals which are not read by (and may not be meant to be read by) practitioners;
6) practitioners too often fail to read research literature;
7) coordinated and accessable dissemination systems for research findings have not been adequately developed; and,
8) practitioners, but also often researchers, fail to utilize the dissemination systems available.

In this period of increasing demand for accountability and decreasing funds for information products, equipment, and services, it is time that researchers and practitioners reach an understanding about the synergistic relationship which must exist between the two groups so that they can join together to solve critical information problems. Below are some suggestions as to how a base could be developed from which this improved understanding could be reached.

First and foremost, all members of the information field must be educated in the research process. While it is not necessary that this education be at a level where all information practitioners are capable of undertaking research projects, it is necessary that all practitioners have sufficient knowledge of the research process to be able to translate on-the-job problems into researchable problem statements and read the field's research literature with sufficient understanding to be able to determine its meaning and utility. It will not be sufficiently timely to simply require all who are now entering the field to take a research course while obtaining their basic education; in order to reach a timely and effective understanding, present practitioners who do not feel comfortable with their basic knowledge of research processes must acknowledge their dis-ease and proceed to relieve themselves from it.

Undoubtedly, the most effective way for information practitioners to learn the basics of research process is to take a course offered by a library, media or information studies program; however, with an ability to extrapolate basic research process knowledge to information field problems, practitioners can benefit from taking an introductory research methods course offered by any of the social science based disciplines. Such courses are readily available throughout Wisconsin and in all other states. If it is not possible to enroll in a semester or quarter length course, a continuing education short course in research processes would be a useful beginning point for practitioners. Fortunately, the University of Wisconsin-Extension Communication Programs/Library and Information Science will be offering such a course, "Practicing Research for Practicing Librarians," in Madison, May 5-7, 1983.[1]

Becoming familiar with the process of research is one of the best investments that information practitioners can make for both themselves and for their many-faceted profession. Acquisition of research process knowledge enhances the practitioner's self-image, and because, generally, the value of research results and those who produce them is held in high esteem throughout society, the value of the profession to society will also be enhanced. A community of practitioners with greater sophistication about research processes would do much to alleviate the problems which beset communication between the field's researchers and practitioners. Practitioners would be better able to identify researchable problems and information researchers would be more likely to turn to practitioners for problem identification. The language barrier between the two groups would be lowered and practitioners would be better able to evaluate the utility of our research literature.

The burden of lowering the communications barrier between researchers and practitioners does not lie solely with the practitioner. Researchers need to publish their research findings in journals which are read by the practitioners for whom the results would be most useful. Unfortunately researchers seem to write most often for the benefit of other researchers, and do so because they are more interested in and dependent upon having their work evaluated by their research peers rather than their practitioner colleagues. It is difficult to "blame" researchers for doing this because most often researchers are rewarded through promotions and/or tenure based upon peer recognition rather than colleague acceptance. The journals in which the researcher must publish in order to gain peer recognition are not those to which practitioners turn. It would do a great deal to lower the communications barrier if researchers would also write versions of their research results for practitioner-oriented journals. It should not be difficult for them to do so, using common, shared language and referring readers of the practitioner-focused version of their findings to the research-focused version so as to assuage any doubts they might have regarding the limitations which a practitioner-focused version would have to contain.

Most researchers, it should be understood, would prefer to spend their time and undoubtedly should spend

an Understanding!
ractitioners Solving
roblems Together

their time, moving on to other research projects which will both add to our base of knowledge and gain for them peer recognition and job-related rewards, rather than writing practitioner focused reports of the research they have already completed. Great strides could be made in both reducing the researcher/practitioner communication barrier and diffusing into the field of practice useful research results if a larger number of practitioners were knowledgeable about the research process. Practitioners would then more often be involved in the research process from its inception, because the research project would be related to a problem identified by a practitioner; thus the practitioner would become a part of a research team with one of his or her major responsibilities being the writing of the practitioner-focused version of the final research report. The practitioner on the research team would also be responsible for choosing the medium through which the practitioner-focused version would be published.

It is critically important that research results are published. Publication allows others to have access to results in a reaccessable package. While it is also important to communicate with practitioners through presenting papers at professional meetings, it is only through publication that access can take place at a time determined useful by the practitioner. Publication assures, to the extent that it is possible, that the research results are reaccessable. Publication allows for the evaluation of results and further allows those who would find it useful to repeat research in a different setting or using a different methodology to do so. While academia-based researchers usually publish their research results, too often practice-based researchers do not. They too often believe that their research is only of interest in their own setting or will have little utility in another setting. While this may indeed be true, it is preferable to let an editor or reviewers of submitted manuscripts make that judgment. (Approximately 62% of all articles submitted to journals in our field are accepted for publication[2] so there is no need to be overly fearful that a submitted manuscript would be rejected.)

While it is true that a portion of the research that is published in our field is not used by practitioners either because it is really not of use or is unintelligible (unintelligible either because of the way in which it is written or because practitioners lack the basic skills necessary to be able to understand it), the result of significant research is available. Much of it, though, is either not easily available to practitioners because it is only accessible by searching a number of indexing and abstracting tools or perhaps because it is not sought out by them. The field of education has several well-developed dissemination networks: The National Diffusion Network, The Research and Development Exchange, and the Educational Resources Information Center [ERIC].[3] While our field utilizes one of the clearinghouses within ERIC, ERIC is neither a comprehensive resource nor one that is highly utilized by practitioners. (A survey of ERIC use showed that only 21% of ERIC users were teachers; 62% of ERIC use was by college students. The amount of use by practitioners in our field is not known to this author, but obviously based upon the above statistics, could not be very significant.)

Practioners must begin to demand of researchers and publishers in our field, more ready access to readable research results. If any field should have a highly-developed dissemination and access system,one would think it would be our own. Even though our field is highly interdisciplinary it should have a comprehensive indexing and abstracting tool. This will only come about when practitioners demand access to such a tool, therefore making it economically feasible for publishers to produce one.

It **is** time we reached an understanding! While there is no panacea for curing all the ills which beset a profession, certainly an increase in the research sophistication of the practitioner community would go a long way towards improving the usefulness of the research which is undertaken, delivering to practitioners results of more useful research, and increasing the use of and perhaps improving the information field's research dissemination systems.

References

1. For further information please contact Darlene Weingand or Barbara Arnold, UW-Extension Communication Programs/ Library and Information Science, 610 Langdon Street, Madison, WI 53706. Phone (608) 262-4354.
2. Based upon an analysis by the author of data supplied by journal editors for Norman D. and Nora B. Stevens, eds. **Author's Guide to Journals in Library and Information Science.** NY: Haworth, 1982.
3. Helen P. Bain and J. Ronald Groseclose, "The Dissemination Dilemma and a Plan for Uniting Disseminators and Practitioners," **Phi Delta Kappen,** 61 (October 1979), p. 101-103.
4. **Ibid,** p. 103.

Pfaehler cont.

person you are visiting as possible. You should know your issue thoroughly and be prepared to clearly and concisely present your point of view.

Schedule all meetings in advance. Dropping in usually does not work. Before your meeting provide the person you are visiting with as much educational material as possible so that they will understand your issue and know why you are there. Make certain that you are punctual and visit only for the time allotted. (Be understanding if you have to wait. Not everyone will be as well prepared and courteous as you.) Now when it is time to really lobby, you and the policy-maker will both be ready.

Where to Begin

Where do you begin? Prior to applying the ideas and suggestions already presented, you need first to become a better, even well-informed citizen. You can do this by:

1. Reading editorials and defining issues.
2. Reading a variety of publications and letting writers know of your agreement.
3. Becoming familiar with elected public officials by attending meetings, coffees, visits.
4. Reading materials contrary to your position.
5. Attending school board meetings regularly and sharing your ideas with board members.
6. Becoming familiar with the political process (not necessarily partisan) by working in it.

While these suggestions are quite basic, they will help you to better articulate the issues. With the advantage of your experience, training, and background, you can provide information to the policy makers to help them make decisions that will have a positive effect on the education of our children. You are important! You are an expert! You can effect change!!

Media Literacy: A Research Team Proposal

by Ronald Fingerson
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Whitewater, Wisconsin

The Problem

As in the evolution of computer languages through four developmental stages: machine, assembler, compiler and non-procedural, one might parallel the development of literacy: visual, verbal, mathematical and computer. **Media literacy** is a global or cluster term which incorporates these four types of literacy; and, depending upon the age level and experience of media center users, mathematical may translate into research and statistics. (Media literacy, media center and media specialist will be used throughout the article as global terms incorporating, among others, such terms as: library literacy, library, librarian, learning resources center and information specialist.)

In order to be classed as literate at a minimum level, a person must be able to "read signs and other simple words and write his or her name and, perhaps, a few more words" (Cartwright, 1981); however, in order to function effectively in a modern and complex society "an individual must be able to read simple instructions, write a legible letter, and engage intelligently in contractual relationships" (Murphy, 1979). A distinction is frequently drawn between being able to communicate at low levels of competency and at high levels of competency; the latter enables one to be classed as functionally literate (Murphy, 1979). Conversely, those unable to communicate within these parameters would be classed as illiterate.

Contemporary media specialists and media center users are daily bombarded with new technologies which require new competencies and new languages. Each person, regardless of role, is continually mandated to acquire new communication skills and new levels of literacy. Within visual literacy, a recent interest in nonverbal communication has resulted in the publication of a large number of titles such as those of Julius Fast: BODY LANGUAGE and THE BODY LANGUAGE OF SEX, POWER AND AGGRESSION. Seels (1979, p. 33) writes that "the qualities of communicating with ourselves and others develop from visual experiences." Oxford and Moore (1979, p. 55) state that "visual persuasion is being used daily to shape our attitudes and perceptions." Dwyer (1978, p. 58) stresses "the relative universality of visual literacy" suggesting that "it is normally distributed" and that "all of us possess this talent to some degree." Yet, much of it has to be learned.

Holliday (1979, p. 38) suggests the interdependency of visual and verbal literacy; and, clearly, computer literacy builds on a foundation of both with the addition of mathematics literacy. How many media specialists and media center users are competent to communicate in the languages of computers? The recent proliferation of microcomputers has placed a demand on both to acquire a working knowledge of BASIC, e.g.:

```
10 INPUT "What are the four Boolean opera-
         tors"; A$
50 PRINT A$
```

Additionally, the tremendous growth of machine-readable databases has generated the requirement that media specialists, particularly, be fluent in the languages of online bibliographic retrieval, e.g.:

```
(MEDIA-CENTER$ OR MEDIA ADJ CENTER$)
AND COMPUTER LITERACY NOT
(EXPERIMENTAL-RESEARCH OR
EXPERIMENTAL ADJ RESEARCH)
```

The abbreviated language of computers recalls the abbreviated language of periodical indexes that media center users, frequently, have so much trouble deciphering, e.g., from LIBRARY LITERATURE:

Weiss, D. A. Reversing the illiteracy trend:
challenges of librarians and library binders.
LIB SCENE 9:8 S'80

MacKinnon (1980, p. 34) feels that "the understanding of the language of the computing process and information handling is a dramatic challenge to the intellect and to the ability of the mind to recognize, compare, analyze and synthesize fact and abstract concept." And, Molnar (1981, p. 26) takes the position that "if individuals are not computer-literate and do not understand how these systems work, they will be unable to take advantage of information and will be unable to meaningfully participate in actions that affect their lives."

The problem, then, confronting the media profession is that of identifying and defining acceptable levels of media competency for all types of media-related people: media specialists, media center support-staff members, and media center users. The Council of Wisconsin Librarians (COWL) recently conducted a survey centering on the same problem. The promise of a solution rests with experimental research.

Research

Experimental research in media literacy, as in other areas of focus, requires objectivity, creativity and control. Kerlinger (1973, p. 301) states that "research questions are stated in the form of hypotheses" and "research design has two basic purposes: (1) to provide answers to research questions; and (2) to control variance." Controlling variance, Kerlinger (1973, p. 306) emphasizes denotes maximizing systematic variance and minimizing error variance and errors of measurement. Roscoe (1975, pp. 6-7) writes that the problems of organizing, implementing and interpreting research "center around three kinds of variables: (1) independent variables whose effects are to be studied; (2) independent variables whose effects are to be controlled; and (3) dependent variables that are observed in order to determine the consequences." Additionally, the selection of the correct measurement scale and statistical test for a given experimental research design require equal competency. How many contemporary media specialists are conversant with such terms and concepts: hypotheses, dependent and independent variables, error variance, and scales of measurement? Probably, relatively few, in Wisconsin or elsewhere, could be accurately classed as functionally literate in experimental research and statistics.

Wherein, then, lies the answer? Dwyer (1978, p. 58) expresses the need for finding answers to literacy research questions; and Radwin (1981, p. 370) finds lacking the answers to literacy questions gained through controlled empirical investigations.

Proposal

While a few media specialists in Wisconsin could be identified who are functionally literate in all of the discussed literacies: visual, verbal, mathematical or research and statistics and computer, probably, many more could be located who are functionally literate in two or more unique combinations. Therefore, this author proposes that a cooperative effort be launched within Wisconsin by the professional associations, e.g., Wisconsin Library Association, Wisconsin Educational Media Association, Wisconsin School Library Media Association, and others, to identify functionally literate professionals who will serve in five-member research teams, each member possessing a minimum of one of the needed unique competencies, to conduct and publish **media literacy** experimental research. All types of media centers must be represented: academic, public, special and school; and all sizes and types of communities should be included.

The primary task of each team would be to design, conduct and publish research investigations; studies that would be capable of replication and generalization. A directory might be compiled, on an annual basis, and published; or, a clearinghouse might be established for the centralization and distribution of these research efforts to the entire professional community.

An alternative task which each team, or individual teams selectively, might consider would be the design of experimental research prototypes which would identify the variables, the methodology controls, the measurement instrument, and the statistical test to be utilized, **i.e.,** all protocols and parameters necessary to successfully conduct the study; then, other professionals in variable settings throughout the State could cooperate by implementing the study, collecting the data, and publishing the results. The team members, who designed the prototype, could assist; then, somewhat more remotely, act as interpreters and consultants or troubleshooters.

The author has recently organized a Library Research Round Table, and gained its acceptance, within the Wisconsin Library Association. One of the objectives of the Round Table is to encourage the formation of the above types of research teams and the design of the above types of experimental research prototypes. Hopefully, the professional association in which each of you invest your primary service activity and energy will also be willing to join in this cooperative effort. If you wish to participate, please write to the author indicating your interest.

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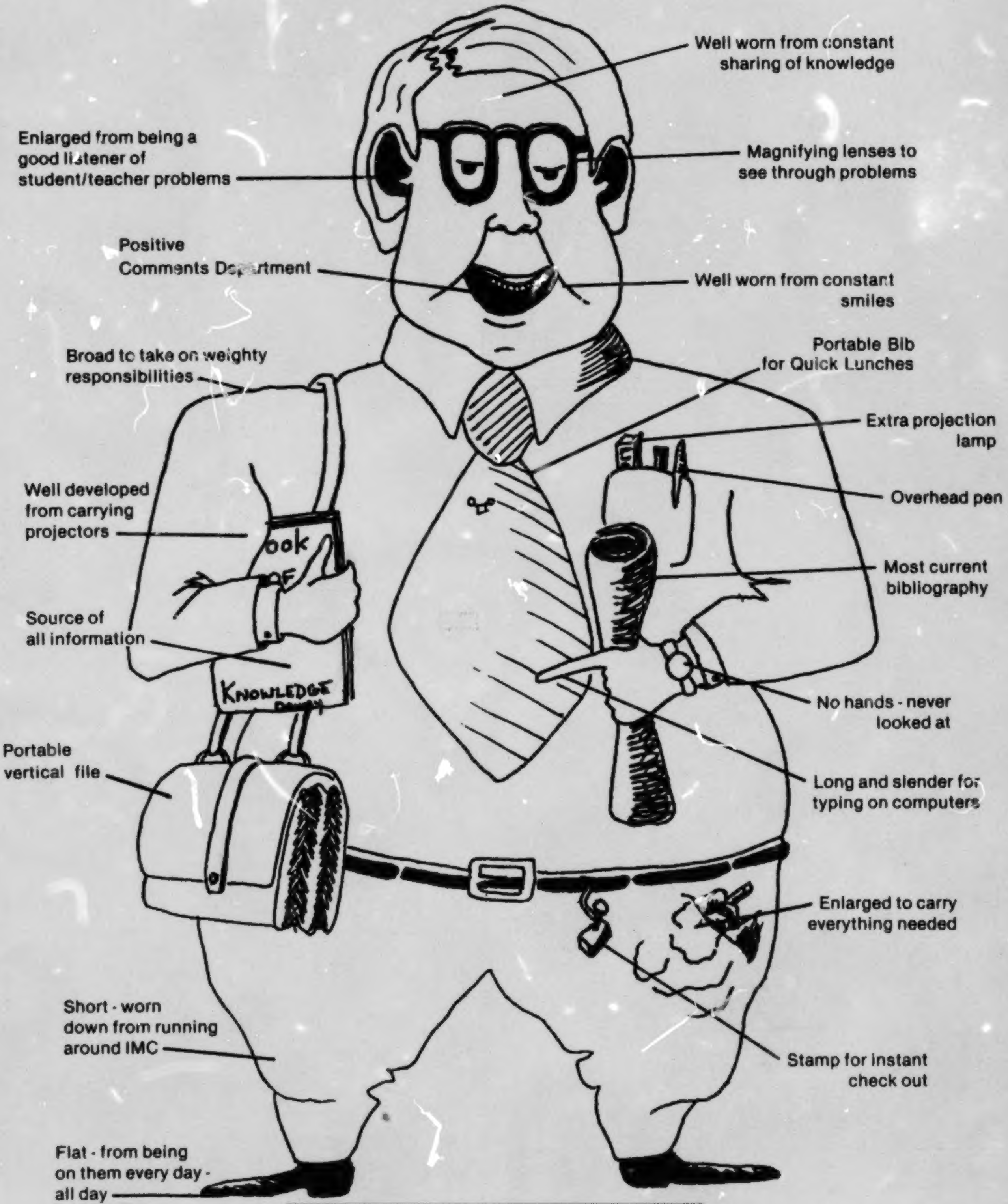
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The Health Curriculum Enters Center Stage

by Beverly L. Good
Library/Media Program
University of Wisconsin-Whitewater

and

Sandy Verrill, R.N.
School District Nurse
Whitewater Unified School District
Whitewater, Wisconsin

Puppet performances and demonstrations during visits to schools by members of major health organization auxiliaries have long been a means of centering the attention of elementary students on the importance of good health habits. Although successful, the timing of such performances was not always convenient, and it was often necessary to videotape or to repeat live performances at each school to accommodate the school schedules. Since this method did not prove entirely satisfactory, we, the Whitewater School District nurse and an elementary school media specialist, decided to explore possible alternatives. We began to revise some health scripts, after having cleared their use with the Wisconsin Auxiliary of the American Optometric Association. We planned to have students participate in roles as puppet characters and to rehearse and videotape the sequences in the Instructional Materials Center (IMC). The tapes could then be played back at the convenience of the classroom teacher at an appropriate time in his or her unit of study. Students who were absent would have the opportunity to view the material independently at a later date.

This is not a new idea. It has been done time and again and is a basic reason for utilizing video equipment in the first place. What is unique about this project is the joint development of learning activities by the school media specialist and the school district nurse.

Since a new video camera, portable video recorder, monitors, etc. were readily available in the IMC, we were anxious to use this equipment and to complete at least a three-segment health series. We didn't know then that this would take us the better part of a year to accomplish. Thinking that there would be more interest if the students planned some of the stage set and costumes, we decided to ask the fifth and sixth graders in the Media Club if they would like to assist in one of these areas or to perform in a skit. Those who wore glasses were encouraged to "try out" for the vision skit. Similarly, those wearing "hoop" or braces were also encouraged to try out for the dental health skit. The response was so great that it was necessary to ask each student to tape record his desired part in order for us to select the voice with the most potential for a particular role.

Because many of our students were bus riders, rehearsals were confined to school hours, usually at noon, twice a week. We would get together after school, in the beginning to make revisions, later on to edit. It was not practical to take students from their classroom studies during the day, therefore they rehearsed when their schedules permitted. Students often suggested improvements in the original script. When we felt that they were ready, we put them on camera. Students were recorded during the noon hour on those days when the nurse was scheduled to be on duty. Bells and other innumerable interruptions for first aid assistance or for telephone call consultations from other schools plagued us unmercifully. Despite the many disturbing occurences, mostly due to lack of a soundproof conference room, we managed to maintain our good humor and to carry on.

We received permission from the American Optometric Association to adapt a script featuring Seymour Safety, a cartoon-like character from outer space. Although students made some of their own props, a Title I Reading Aide provided a professional touch to the end result by designing Seymour's wardrobe, and adding theatrical effects to our set. She also prepared the art work for the telecast visuals of the Dental Health and Vision segments. Third graders were involved in the Nutrition segment which was under the direction of two team teachers. Each student wrote his or her own part in the various food groups and created their own puppets. Much of the preliminary work was completed in the classroom and in the IMC where books and audiovisual resource materials were available. The videotaping was done in the IMC. After the initial classroom preparation, the students viewed the video tape programs. A question and answer session, moderated either by the teacher or the school nurse, followed the viewing. Work sheets were then completed in class, discussed and taken home. Additional handout information was given to students for sharing with parents. In one instance (the Dental Health program) toothpaste and toothbrush samples were distributed by the nurse.

Needless to say, this was an excellent learning activity for those students who participated. The following research skills were enhanced: the vertical file was used to locate background materials for their scripts; reference materials were examined for facts; audiovisual materials gave them more ideas; common program subject headings were learned by using the card catalog and magazine indexes; students became more familiar with audiovisual equipment terminology. Furthermore, student communication skills were improved and peer concept enhanced through association with the project. Viewers related well to seeing their friends or siblings on videotape. The enthusiasm that the project generated among the student body, staff and parents was well worth the effort and time.

Editor's Note: Beverly Good was the Librarian and building AV Coordinator at Lakeview Elementary School, Whitewater, Wisconsin during the development and production of the health series described above.

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Membership is More than a 10 Letter Word!

by David Graf
Program Director
Media Technology Graduate Program
University of Wisconsin-Stout
Menomonie, Wisconsin

This article will suggest a number of ways that any member of the Wisconsin Educational Media Association (WEMA) can become a more active member of the Association. Although the article is directed toward the WEMA member, the ideas expressed are applicable to the membership of any professional association.

Let's begin with a profile of the typical WEMA member. The typical WEMA member is employed in either a public school or a college or university. (Fact: of 382 members, 310 fall into these two categories). The typical WEMA member attends one out of every three statewide conferences sponsored by WEMA. The typical WEMA member has probably never had an article published. (Fact: there is a very definite lack of media literature produced by Wisconsin media professionals).

While this member makes valid and worthwhile contributions to the profession by making a difference in his/her job setting and by attending conferences, I would classify these members as "passive" members.

The remainder of this article will detail some suggestions for becoming an 'active' member of WEMA--one who is really involved and willing to work for the improvement of the association--and therefore the profession. By improving the profession and the association which represents that profession, we can improve our individual work settings.

1. Get a friend to join.

Talk to your friends and colleagues. Convince them to join. Indeed, shame them if you must. Your own enthusiasm can be one of the best selling points. We can make a difference, but only if we have a concerned membership.

In my attempts to convince others to join WEMA, I am often asked the question, "What do I get for my membership?" Personally, I find this question a bit disconcerting and somewhat unprofessional. The person who asks that question is, in my opinion, not a very concerned professional. It seems to me that professional people ought to consider membership in the professional organization which represents them. Doctors, dentists, lawyers, and other professionals are members of the professional organizations which represent their interests. We, as media professionals, should be no different.

The simple fact of the matter is that WEMA is one of the least expensive professional organizations in the State. Our dues are low. Our conferences are very inexpensive (and very worthwhile, judging from feedback received from those who attend). If you question this, talk to someone who belongs to the Minnesota or Illinois association. Ask them how much their dues are and what they paid for registration and lodging at their last conference.

2. Involve your Students in the Media Fair.

WEMA has been supporting an annual Media Fair for student produced media for over six years. Participation in the Media Fair competition has been very sparse. We know that your students are producing media. What better way to show off their work! What better way to show your administration that you are directly involved in teaching! What better way to show your students that you care about their work!

The entry fee is very cheap. It costs twenty cents to enter the Media Fair--the cost of a postage stamp to mail in the entry blank. Watch for the Media Fair announcement in the Dispatch. Post it so your students can see it. When they ask you about it, be enthusiastic.

3. Write an Article.

The journal you are reading is the result of a lot of work on the part of a few people. The individuals who wrote articles for this publication did so voluntarily, with no remuneration for their efforts. The individuals responsible for the editing and pre- and post-publication work also are volunteers.

Writing an article for the Dispatch or the Wisconsin Ideas Journal is not very difficult. Set pen to paper and go to it. The biggest difficulty for most people is thinking that what they have to offer is either useless or unimportant. Utter whimsy! If every writer thought that way, nothing would ever be written! Consider co-authoring an article. Your opinion and experiences are important. You could make a difference in what this author sees as a gap in the literature written for and by media professionals in Wisconsin.

4. Serve on a Committee.

WEMA could not operate without the assistance provided by those members who serve on its committees. WEMA's committee structure is what makes it work as an organization. A list of current WEMA committees appears below:

Standing Committees:
  Conference Planning Committee
  Legislative Committee
  Membership Committee
  Leadership Committee

Ad Hoc Committees:
  Audit
  Public Relations
  Journal
  Student Media Fair
  Archives
  Grant Awards
  Spring Conference
  Fall Conference
  Nominations
  Special Projects

If you are interested in finding out more about any of these committees--or better yet would like to serve on one of these committees--all you need do is let the President of WEMA know of your interest. You should be aware of the two requirements for serving on a WEMA committee. First, you must have a willingness to work. Second, you must be willing to make a commitment to attend committee meetings. That's all there is to it.

5. Run for Office.

Running for office in WEMA is something not everyone can do. There are, after all, a limited number of places on the Board of Directors. Similarly, there are many media professionals who might wish to become involved at this level, but who feel their school board or administration would not permit their involvement. But have you asked them! You might be surprised at the response.

The Nominating Committee is charged with putting together a slate of officers and a board of directors. Theirs is a difficult task. If you are interested in serving as an officer or would like to be considered for election as a board member, all you need do is let the President know of your desire to serve.

6. Get Involved In Your Satellite Organization.

The six regional satellites supported in part by WEMA are always looking for people who are willing to help plan meetings, speak at meetings, or even host meetings. This kind of involvement can often be a substitute for your inability to attend state-wide conferences. Support your Satellite by attending its meetings and helping with its programs.

7. Vote in the Elections.

Happily, it can be reported that 75% of the WEMA membership voted in the last election. It is extremely important that you exercise your right to vote in the election of officers and board members. These individuals represent your interests.

8. Communicate With The Board

Communication with the Board can be as simple as talking to a Board member on the telephone or in person. Or it can be more formal, in the form of a letter directed to the Board. The bottom line is that the Board can only be responsive to your concerns if you let them know what your concerns are! Please, please let your Board know where you stand on issues. Let them know what you like or don't like about the Association. This, too, is a right of your membership.

9. Become a Conference Presenter

For each of the Conferences sponsored by WEMA, the Conference Planning Committee is responsible for lining up the speakers for the various sessions. This task could be all the more easier if you would simply let this Committee know that you are interested in being a presenter. Let them know what topic you could speak about. But most important, let them know you are interested in being a speaker.

10. Assist in the Legislative Network

WEMA has been very influential in affecting legislation which impacts upon school media programs. The Legislative Network exists solely to serve as a vehicle for contacting State legislators when important decisions are about to be made which will affect us. The network is primarily a telephone network. Your participation in this network can mean the difference.

You may have noticed that the term, "make a difference," or "mean the difference," was used a number of times throughout this article. Those who were in attendance at the 1982 WEMA Spring Conference in Eau Claire heard Rollie Billings (then President of the Association for Educational Communications and Technology) speak about how we can make a difference. His theme of "making a difference" is an appropriate thought for all of us; however, before we can make a difference, we must be different. We must be involved.

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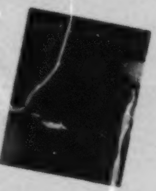

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FREE FILMS: PROBLEM OR PANACEA

by Carol D. Stanke
Former IMC Director
Maplewood Junior High School
Menasha, WI 54952

Recently there has been renewed controversy over the use of free films in education. While they can represent a valuable resource at a time when funds are limited, and it is also undeniable that many free films provide interesting information on curriculum-related topics, some are of questionable educational value and, even worse, the particular bias of the producer may cast doubt on the accuracy of information in others.

An excellent example of a free film series which is highly recommended by some science teachers is "The Search for Solutions" by Phillips Petroleum, which provides a useful review of scientific procedures. Films on a wide variety of substantive educational topics are also available from many state and federal government agencies, as well as the National Film Board of Canada.

Toward the other end of the spectrum are many innocuous or even poorly made films which are of no real educational purpose without careful selection and application. Even more controversial are films such as those on ecology produced by oil or mining companies or the topic of nuclear energy when produced by the Atomic Energy Commission, which must be carefully reviewed to determine if they are truly factual or actually propaganda. Careful preparations must be made for the use of these films in classrooms in order to balance any inherent bias with discussion or supplementary materials.

Realistically, most of the problems caused by free films are created by the fact that their use is free, or essentially so, except for return postage. This means that they frequently are not ordered through regular school purchasing channels and instead only appear as office mailing expenses indistinguishable from other postage. This situation encourages frequent direct ordering and use of free films by teachers without any monitoring of their educational value.

Among the abuses which result are films shown to classes which are not correlated to any unit being taught, either because the film was not available at the desired time, or because it was not chosen on any other basis than entertainment. Frequently, when many films are shown, teachers may not adequately preview, introduce, and discuss the films with their classes. Another common abuse, particularly in elementary schools, is that some teachers offer to share their films with other teachers as a generous gesture; the unfortunate result is that, when one teacher orders the same film annually, many students may view that same film year after year. This practice may be unnoticed because some teachers are pleased to have their students occupied watching films, and many principals avoid evaluating teachers when their classes are viewing media. It must be emphasized that even a free item is not a bargain unless it is educationally sound and relevant.

The role of media specialists in the use of free films varies widely from district to district and even from building to building. When abuses become apparent, however, the building media specialist is frequently requested to aid in monitoring their use, either simply by handling the orders and checking on returns or also by noting the subjects ordered, their relevancy, and the total dollars expended by particular teachers.

One means of controlling the overuse of free films by one or more teachers in a building is simply to have the administration require that all orders for free films be placed at one time through a central point such as the media center. Exceptions, of course, may be made for new films and for cancellations later in the year. This procedure makes the degree of use of free films within a school quite obvious and is also very sensible, as most films should be ordered well in advance of their desired use in order to insure availability on the desired date.

A second step which requires some record-keeping is to maintain a title file of films ordered each year along with a record of the classes to which they were shown, which will provide data on repetitious use. In extreme cases, one approach is to require that, unless evaluation forms be turned in for each film used, that film will not be reordered. While these forms can and probably should be very simple in nature, questions such as the subject matter, appropriate grade level and a rough rating of the film can quickly reveal inappropriate educational uses, i.e., a film rated as suitable for grades K-2 shown to upper elementary students by another teacher.

One side issue which is exacerbated by the use of free films, as the cost of rental films usually precludes excessive use, is the expectation in some buildings that all films will be shown in the media center by media center staff. This seems logical in some cases, particularly when several classes wish to view the same film and the media center is the only location with adequate seating capacity. Great care must be taken, however, that this is not simply a convenient excuse, for the abuse of this practice may prevent the media center and its staff from performing other normal functions. Questions that should be considered are:

1) Is the film being shown relevant to the curriculum?
2) Is it appropriate for all of the classes viewing the film?
3) Are the classroom teachers introducing the film and leading discussion afterwards?

If the answers to the above questions are not positive, then the assistance of the principal should be solicited to promote more valuable use of the IMC. If the principal's support cannot be expected, careful records should be kept of the time that the IMC is "out of commission" because of film showings. With documentation, the advice or assistance of the principal, district media director, curriculum director or other administrators can be readily requested.

Free films, like most other educational aids, are only as good as the teacher using them. With careful selection, previewing, relevance to curriculum and grade level, and class discussion after use, they can provide an interesting and inexpensive supplement to the curriculum. Abuses resulting from overuse or inadequate selection and preparation should be promptly recognized and evaluated, and steps should be taken to correct the situation. This is essential in order to insure the continued acceptance of media use as a valid educational tool.

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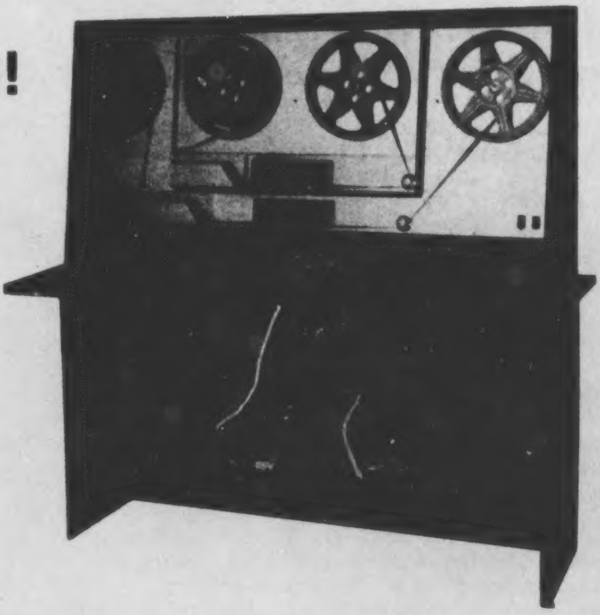

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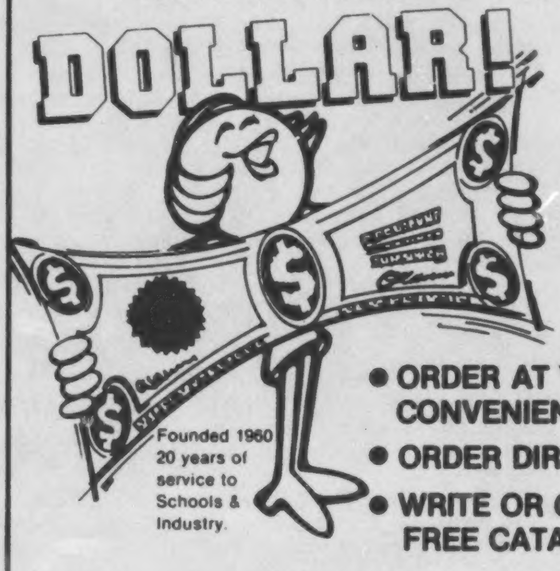

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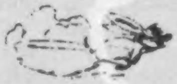

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CESA and The Regional Media Center Concept in Wisconsin

by ***Rosanne Krubsack***
Director
Regional Media Center
Fennimore, Wisconsin

Seven years ago 31 school superintendents and a CESA administrator who is a strong supporter of media programs began working on the concept of a Regional Media Center to serve their districts. Their goal was the equalization of educational opportunities made possible through the sharing of resources. The enrollment of the districts involved ranges from 370 to 2000. The territory covered by these 31 districts is the 5 county area of Crawford, Grant, Iowa, Lafayette and Richland covering an 80 mile radius from the main office of Cooperative Educational Service Agency 14 (CESA 14) in Fennimore, Wisconsin. Today, their dream has become reality, and their idea has come of age. The 31 school districts are not only sharing materials with one another, but they are sharing with area academic and public institutions (see chart). Taking advantage of area and state resources has eased the effects of the current economic crunch.

What exactly is this Regional Media Center which has developed in the Cooperative Educational Service Agency 14? How does it differ from Regional Media Centers in other states? What are the possibilities for the development of Regional Media Centers elsewhere in Wisconsin?

The Regional Media Center at CESA 14 began with a delivery system which includes a stop at each district twice a week and a small collection of media obtained as a result of grants in environmental education and Title II.

Immediate contacts with the University of Wisconsin-Platteville (UW-P), the Southwestern Wisconsin Vocational Technical Institute (SWVTI) and the Southwest Wisconsin Library System (SWLS) were made by the CESA 14 agency administrator, Melvin O. Bollom. Initial agreements between these agencies provided that a print catalog would be produced by CESA 14 which would list all of the audiovisual material available for loan in each of these agencies. The catalog was produced and copies were distributed to all buildings within each school district. Carbonless forms were used for requesting materials. The delivery van picked up the requests and transported the materials to and from the schools, the three major libraries (which became regular van stops) and the CESA 14 office.

Following this initial success, CESA 14, SWLS and UW-P applied for a Library Services and Construction Act (LSCA) grant to fund further cooperative projects. From this endeavor came the opportunity for teachers, administrators and public librarians to obtain photocopies of periodical articles held at UW-Platteville's Karrmann Library by simply sending a request via the delivery van. Photocopies were returned in the same manner to the requestor. In addition, a directory of library personnel and a monthly interlibrary newsletter were born and continue today. Costs are shared between the Southwest Association of Libraries, SWLS and CESA 14.

Shortly after the delivery system began operating and the above mentioned grants were applied for, CESA 14 hired a media specialist to manage the Regional Media Center and assist with cooperative grants.

Among the more ambitious projects undertaken by the Regional Media Center were the compiling of catalogs listing all of the sheet music and the audiovisual materials which the 31 school districts were willing to loan. The sheet music exchange is now operating on its own while the audiovisual lists are corrected and updated each summer.

Other resources which have been made available to the 31 school districts include access to a textbook examination center, a map library, government documents and over 100 computer databases. An audiovisual equipment repair service, a printing department and the cooperative purchasing of audiovisual supplies are additional facets of the current Regional Media Center programs at CESA 14.

One of the biggest boons to the school districts in the CESA 14 area has been the willingness of Southwest Wisconsin Library System to fill author, title, and subject requests for the school districts. Because there are no towns with populations of over 10,000, access to supplementary print materials is difficult. SWLS fills this need at present. It is hoped that in the future some form of centralized cataloguing and processing will allow for a union list of print material in the area.

Aside from the resource sharing endeavors of the CESA 14 Regional Media Center, consultation, continuing education, and technical assistance are often provided in accordance with the suggestions of media specialists in the school districts.

Regional Media Centers in Other States

In 1980-81 I had the opportunity to serve on the State Department of Library Services' Regional Media Center Study Committee. This involved the studying of centers in Iowa, Michigan and other states. We found that regional media centers in other states range from centers, mandated and heavily supported by state and local funds, as in the case of Iowa, to those with total, local district support in various other states. Among the services provided by these centers were the maintenance of large collections, particularly of films, video tape duplication, laminating, printing, etc. Nowhere did we find the major emphasis on networking and resource sharing.

The Case for RMCs in Wisconsin

The need for networking and resource sharing involving school media centers is obvious based on the following facts:

1. Of the school districts in Wisconsin 77.1% have an enrollment of 2000 or less. Of these, 20.1% have school populations of under 500. Many have correspondingly small budgets and resources.
2. Large public libraries are often not within driving proximity for students and teachers. Small public libraries are often open 25 hours per week or less.
3. The job of the media specialist in a school district is labor intensive with few being able to take time to attend meetings.
4. Only 30 of the 433 school districts in the state have full time district media directors.
5. Multitype library councils, which at one time were able to support a part time coordinator, are now having a difficult time maintaining that position.

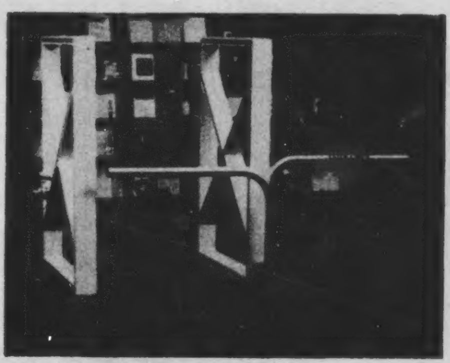
6. Rather than spend tax dollars providing duplicate collections in an area, resource sharing can greatly enhance a school district's core collection.

7. The job of creating networks for resource sharing is a very time consuming one. Besides the initial contacts and arrangements which must be made, school administrators and boards must be convinced, and their fears of damage and loss of materials laid to rest. The job of updating the union lists and getting them produced takes no less than 1 month each year.

Would the hiring of a part time media specialist to coordinate resource sharing serve the same needs as would the Regional Media Center concept? This writer does not agree for the following reasons:

1. There are collections of media in almost every CESA which are the result of grants, donations by corporations, etc. These collections are for use by the school districts within the CESAs and need coordination and distribution.
2. Many CESAs already have a delivery system intact with which to facilitate the resource sharing.
3. The CESA-based media specialist can act as an advocate and spokesperson for the concerns of school districts at regional, state and national levels.
4. A CESA-based media consultant who meets regularly with school media specialists can respond to needs and concerns, as well as put them in touch with state-level consultants, professional organizations and resources on a regular, on-going basis.
5. A Regional Media Center specialist can coordinate cooperative purchasing, repair services, film cleaning units, etc.

The success of CESA 14's Regional Media Center has demonstrated that this concept works. Perhaps the time has come for Regional Media Centers throughout Wisconsin.



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31 Wisconsin School Districts
Borrowing for 1 school year*

Borrowed from	Collection is	No. of Items	Percent of Total
CESA 14 (union list)	90% AV, 10% print	4998 items	39% of requests
UW-LaCrosse (union list)	film library	2500 films	19.5% of requests
WDP** (request by subject)	ERIC searches	139 searches	1%
SWLS (union list of AV only)	books and AV	3417 items 62% books 20% subject 4% periodicals	27% — 13% AV
UW-Platteville (union list)	periodicals	1196 articles	9%
School and Public Libraries, UW-P and SWVTI (union list)	AV only	572 items	4.5%
TOTAL		12,822 items	99%

* Figured at 180 student contact days. This does not include borrowing within a community between public school, public library, private school, etc.

** Wisconsin Dissemination Project

Compiled by CESA 14
May 1982

Speak & Spell Modification

by David Cooley
District Media Director
Black River Falls School District
Black River Falls, Wisconsin

Are you tired of the adapter cords breaking on your Texas Instrument's Speak & Spell units?

Would you like to eliminate hearing the Speak & Spell voice in the background all day long?

If these two questions have plagued you, as they have many, the following modifications may be of interest to you. These modifications will provide a securely mounted unit that will be less subject to damage and abuse. In addition, the use of headphones will also reduce the noise level within your IMC.

The procedure to make the needed modifications is simple. It provides for the mounting of the Speak & Spell unit, with a headphone junction box, and an AC power adapter on a "Masonite" board (see photo). Through this arrangement, the electrical cord from the power adapter to the Speak & Spell unit, as well as the audio line from the junction box to the Speak & Spell unit, can be hidden out of sight and touch. The remainder of this article explains the procedure beginning with the items that are needed, as well as the tools needed to complete the step by step procedure.

Items Needed:

1. Speak & Spell unit (or Speak & Read unit, etc.) with built-in earphone jack and 6 volt DC input jack
2. AC power adapter for Speak & Spell unit (6 volt)
3. Headphone junction box with volume controls
4. Silicone glue (i.e. GE Silicone Household Glue and Seal)
5. "Masonite" tempered hardboard, 13" x 14" (1/8" or 1/4" thickness)
6. Audio cable, 8" to 10" length, with 1/8" male miniplug, 8" to 10" length
7. AC power extension cord, light weight
8. Fine grain sandpaper
9. Audio headset
10. Library check out card and pocket

Tools Needed:

1. Drill and 3/4" bit
2. Saber saw
3. Soldering iron and solder

Procedure:

1. Cut a 13" x 14" rectangle from the "Masonite" hardboard. Sand rough edges if needed.
2. Lay the Speak & Spell unit, headphone junction box and AC power adapter on the hardboard rectangle and arrange as shown in photo. Outline the location of each item upon the board with a pencil.
3. Remove top cover from the headphone junction box. Across from the built-in jacks on the Speak & Spell unit, carefully mark location where holes are to be drilled into the side wall of the headphone junction box. Remember, holes in the junction box wall must be carefully aligned with the built-in earphone jack and the 6 volt DC input jack of the Speak & Spell unit. Remove headphone junction box away from Speak & Spell unit and drill holes with 3/4" bit at marked locations. Replace junction box next to Speak & Spell unit to verify alignment of holes with built-in jacks.

Modified Speak & Spell unit

4. If you wish to change the program modules for the Speak & Spell unit, an access slot should be cut into the hardboard. The access slot will have to be aligned with the module access compartment on the backside of the Speak & Spell unit.
5. Check positioning of the AC power adapter on board (see photo). While on its side with the male power connections or prongs facing away from the Speak & Spell unit, the adaptor should be positioned above the headphone junction box so that the bottom of the adapter will fit snugly against the junction box. Mark the location and drill a 3/4" hole in junction box to receive the 6 volt adapter cable.
6. Apply the silicone glue to several spots on the backside of the Speak & Spell unit and reposition the unit within the outline drawn upon the board. Similarly, apply glue to the backside of the headphone junction box and reposition it upon the board. Thread 6 volt adapter cable through appropriate hole in junction box and then apply glue to side and bottom of adapter. Reposition adapter on board.
7. Allow glue to dry for twenty-four hours.

8. Allowing sufficient cable to reach the Speak & Spell earphone jack (miniplug), solder audio cable to junction box input jack.
9. Plug miniplug into earphone jack of Speak & Spell unit. Plug 6 volt adapter cable into 6 volt DC input jack of Speak & Spell unit.
10. Connect the AC power extension cord to the AC power adapter and into an AC power wall receptacle.
11. Turn on power to the Speak & Spell unit (built-in on/off switch) and plug a headset into headphone junction box. Test all headphone jacks and volume controls on junction box to verify complete circuit (adequate sound).
12. Replace headphone junction box cover.
13. Glue check out pocket to the top of the board and add check out card.

Within the Black River Falls School District, we have found this method for securing our Speak & Spell units to be very satisfactory. We are, therefore, using the same arrangement for securing electronic calculators for use within the school and IMC. Should either the Speak & Spell units or calculators need repair, they can be pried up from the board and removed. We hope that you will also find this project to be helpful in your IMC.

Films on Drugs and Alcohol

Be Well

Comebacker: The Bob Welch Story
Junior High – Adult, 22 minutes
The story of Los Angeles Dodger pitcher Bob Welch's successul battle with alcoholism.

The Glug
Intermediate – Junior High, 15 minutes
The kids begin drinking for fun, but Tony soon can't stop. He is sick and in trouble, but won't seek help until a crisis helps him see what he's doing to himself.

Drugs and the Nervous System, 2nd Revision
Intermediate – Junior High, 17½ minutes
The update of this classic film contains information on such currently popular drugs as cocaine and PCP. Also includes alcohol.

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CESA 11 Teleconference Network

by Judith Aakre
CTN Project Director
and
Marilyn Van Wyk
CTN Inservice Director
CESA #11
Onalaska, Wisconsin

"Watson, come here . . . I need you." These were the first instructions voiced over the telephone by Alexander Graham Bell to his assistant waiting in a distant room. Today, a variety of instruction goes over telephone lines to "distant learning environments" via the CESA #11 Teleconference Network (CTN).

The Network developed as a result of rising costs and decreasing enrollments. The goal of the CTN project was to improve the educational program in the twenty-four school districts of the Cooperative Educational Services Area #11 (CESA). This was done through the development and use of a cost effective and energy efficient aural interactive communications system. This system would make courses, inservice programs and meetings more accessible to students, teachers, administrators, support staff, and school board members.

The CTN project was funded by the Elementary and Secondary Education Act (ESEA) Title IV-C grant, and utilizes dedicated four-wire telephone lines that plug into a speaker instead of a standard telephone. Thus everyone in the room can hear what is said over the line. To talk on the line, one simply speaks into one of the four microphones connected to the speaker. Programs can originate from all stations and can interconnect with the University of Wisconsin-Extension Telephone Network (ETN). Speakers may address these groups from anywhere in the United States by "patching" into the network, from an ordinary telephone. The twenty-five high schools in CESA #11 each have at least two rooms wired for the network.

Organization and Staffing

The CESA #11 staff, consisting of a director and an inservice director, are responsible for scheduling student and adult education classes, inservice programs and meetings. A CTN newsletter is sent out each semester to all CESA #11 teachers informing them of the programs and courses that will be on the network. Monthly updates and reminders are also sent to school district principals to be posted in each building. Each district has designated a facilitator whose responsibilities include arranging the room and equipment for use, distributing the CTN newsletter and program materials to the staff, and collecting surveys and evaluations from program participants. An advisory board composed of district superintendents, principals, teachers, and facilitators, assists the CTN staff with programming decisions.

Programming

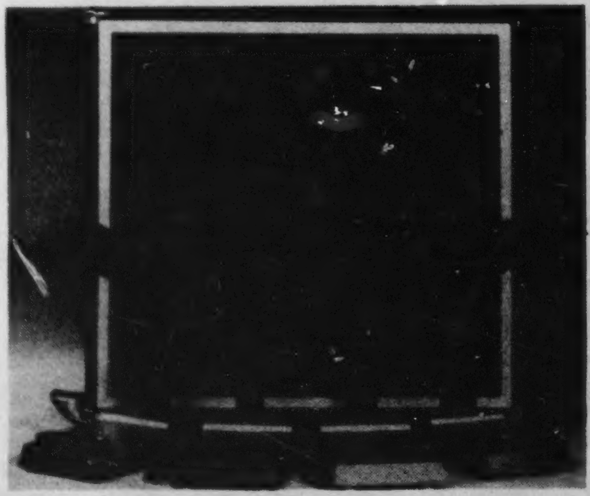
Examples of programs scheduled during the past year are district initiated rap-sessions, classroom teachers discussing difficulties encountered in mainstreaming, school guidance counselors sharing ideas and elementary principals probing the pros and cons of all day/alternate day kindergarten. Teacher inservice sessions covered such diversified topics as the American Diet, Prevention of Sports Related Injuries, Biofeedback, and Score Analysis of Band Contest Music.

One typical day's schedule included: a weekly meeting of school media specialists, an ETN program offering a credit course on Public Library Management, Spanish and French classes for high school students in six different school districts, a late afternoon teacher inservice program on "Math for the 80's," and an adult German course in the evening hours.

University credit courses have also been offered over the network. These courses have originated from both UW-La Crosse and UW-Stout. At least two courses per semester will be available for teachers and administrators. Western Wisconsin Technical Institute has also been involved in the project and has offered courses in German and Real Estate. These adult credit and non-credit courses are only available in districts that have approval to open their buildings in the evenings.

Since the first year of the network's inception, student course programming has increased. From a timid start with thirty students in French I and Spanish I, these low enrollment course offerings have expanded to include over 150 students in French I, German I, Spanish II, and two sections of Spanish I. The foreign language courses meet daily and students receive credit equivalent to what they would get in a traditional classroom setting.

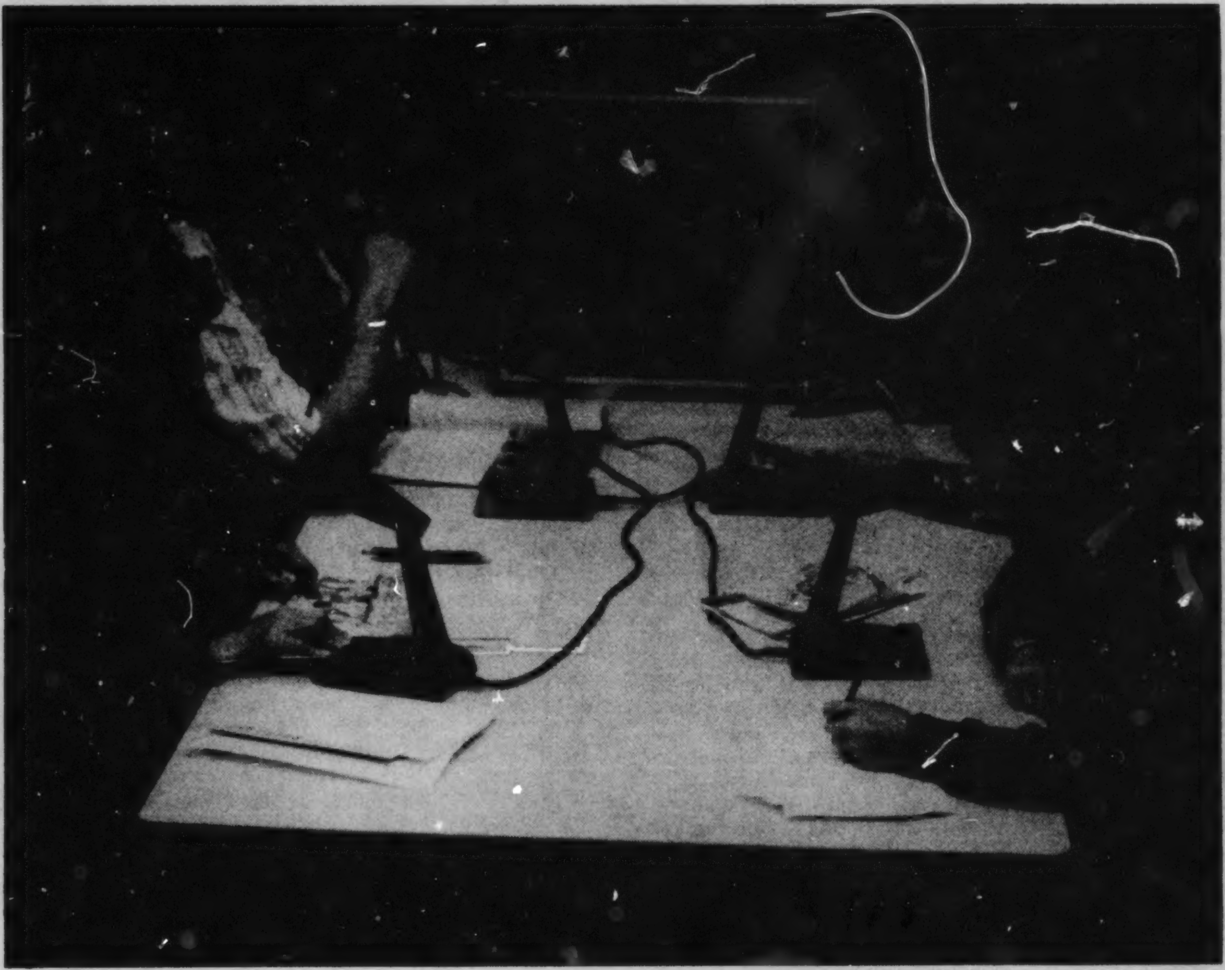
Next year, programming will also branch out to include elementary students in those schools which are adjacent to the high schools where CTN equipment is currently being used. Participating districts will design "mini-courses" appropriate to the needs and abilities of their students.



Darome 604 convener and four microphones with "push to activate" switches

Teletechniques

Giving presentations without seeing the audience or having the audience able to see you, is more difficult than a face-to-face presentation. For this reason, a brochure on Teletechniques is sent to all presenters. Teletechniques are methods of successful interactive teleconferencing developed by the Instructional Communications System of the University of Wisconsin-Extension. They emphasize the need for the presenter to humanize his presentation, involve his audience, vary his presentation style, and obtain and use audience feedback. The project staff is currently developing a video tape on how to make CTN presentations. This tape will be used to help teachers and presenters.



Clients using the teleconference network equipment

The audience also has a more difficult time when they can not see the presenter but must rely instead on their listening skills. To help them stay "tuned in" to the speaker, handouts are available for all presentations and the listeners are asked to interact when they have questions.

Logistics

The CESA van delivers materials to all of the school districts twice weekly so materials are easily distributed for the inservice programs, meetings, and classes. For student courses, each school district has a person responsible for the CTN classes. Materials such as textbooks, handouts, and tests are sent to that person in the fall so that they are available when needed. Student assignments and tests are sent to the course instructor via the van as soon as the assignments are completed.

The equipment used is the Darome 604 convener and four microphones with "push to activate" switches. The conveners are also maintenance free. If a problem develops, an extra unit is available so that no site is left without equipment. The telephone lines belong to, and are maintained by, the local phone company. All presentations and classes are monitored so that if phone problems arise, they can be diagnosed and solved immediately. The phone companies usually can make needed repair within twenty-four hours.

Ask any educator to articulate their biggest problem and the answer is likely to include "time" and "money." The CESA #11 Teleconference Network provides an efficent method for addressing these problems. Alexander Graham Bell — If you could hear us now!

Strategies for the

by Darlene E. Weingand
Assistant Professor
University of Wisconsin-Extension
Communication Programs & University of
Wisconsin-Madison Library School
Madison, Wisconsin

What are future trends within the educational media field? This question can be answered with a single word: CHANGE. The explosion of knowledge that society is currently experiencing is more than phenomenal; its impact on societal functions, processes and values is profound. Today, change is the only constant.

> Alvin Toffler (1972) has stated that: For people who are going to have to deal with an avalanche of change in the short span of a few decades, nothing will be more important than the habit of anticipating change. We need an education which helps inculcate this habit and which helps the individual to develop and continually revise and improve his images of the future. A sense of the future, a sense of its possibilities, likelihoods, and dangers, becomes, in a high-change society, an absolute survival necessity. People cope better when they have some awareness of tomorrow, and schools must begin to design this awareness into the action curriculum.

How does change affect the development of educational media services? Take the number 65...subtract an individual's age and divide by 3. The resultant figure equals the number of times information will turn over before that individual retires. In practical terms, this means that a fifth grader who is 10 years old is likely to experience more than 18 information conversions; a 16 year old high school student would face 16 turnovers; a 40 year old returning student would meet 8 information shifts.

Such statistics are almost beyond comprehension. But they do graphically illustrate the intensity of the need for coping strategies among our population. There is simply no way for educational media services to be of value to student clientele groups without taking a dynamic and proactive approach to information service.

How can educational media services accept the challenge presented by change? Let us consider several strategies.

Planning for Change

The importance of planning is becoming more accepted every day. As accountability to the tax-paying public becomes a more real factor in securing funding, the development of short and long range planning processes which create benchmark mission, needs assessment, goals, objectives, action strategies and evaluation techniques against which to measure present accomplishment and future intent moves from its former status of "nice, if we have time" to "we can't survive without it."

In today's world, the key to effective planning is in the construction of alternative plans--so that appropriate strategies are already in place when the warm or bitter winds of change begin to blow. While this may be a somewhat more extensive process, the benefits to be derived from this thinking through of "what if's" far outweigh the human and physical resource cost involved. A key element in alternative planning is forecasting.

The Critical Need to Forecast

Why use forecasting techniques? There is a definite responsibility factor in the relationship between education media services and their clientele groups. Students of whatever age may have some sense of emerging trends. However, those operations which profess to be information centers and would seek to be the nerve centers of their respective communities MUST function on the cutting edge of innovation and provide opportunities for students to forge linkages between the present and the future.

Simple awareness of current technologies and trends is not sufficient. Linear extrapolation can be very effective in a slowly changing society; but in this rapidly shifting environment, there are too many variables impinging upon developmental patterns to indulge any longer in a linear model.

What choices, then, remain? There are many methodologies which do not share the limitations of the linear model. These include, but are certainly not restricted to:

1) THE DELPHI METHOD, which uses expert group opinion within the parameters of anonymity, iteration/controlled feedback, and statistical group response to arrive at degrees of consensus or dissensus on potential change. The bias of group charisma is avoided and the opportunity for panel members to change opinions is continually present. The critical elements in a Delphi study include careful selection of recognized experts in the desired subject area for panel membership and proper formulation and interpretation of the questionnaire.

2) CROSS-IMPACT MATRICES, which can be constructed in varying degrees of complexity. In elementary terms, the matrix contains cells which represent interactions among projected events which have been arranged chronologically on both horizontal and vertical axes. The forecaster starts with the earliest event and determines the impact on all later events if the first event occurs as forecast--and the impact if it does not. The rest of the events are then taken in chronological sequence. The importance of this method lies in its concentration on the potential interaction among events.

3) SCENARIOS, which are less rigorous and more detailed than the matrix. Scenarios can be effectively used to flesh out a matrix, identifying cumulative impact. A common approach in scenario construction is the "option format," where "best case" and "worst case" examples are created.

There are many other methods than the three that have been cited. Texts on forecasting can provide explanatory material on a variety of techniques. However, the importance of forecasting lies not in the specific method used--but that it be done at all, and be used routinely as a component of long range planning.

Building on Generational Assumptions

When forecasting is employed as a tool, its methodologies are universally grounded in present realities. One of those vital realities is the generational assumption.

Media Future

Each generation traverses life with assumptions in place which are rooted in personal knowledge and experience. Further, the assumptions continually vary as humankind develops--and the rate of change determines in large part the rate of alteration in assumptions.

For example, an individual born in 1902--80 years ago--could not inherently conceive of airplanes and television. Yet the 40 year old, born in 1942, accepted both as real, if not yet commonplace within a culture--but had no inkling of what a computer was, much less how it could change society. The students of today DO carry the computer assumption, along with those of the video cassette recorder (VCR), satellites, and space shuttles.

The point to be made is that what is assumed becomes an expectation. Educational media services, as other types of libraries and information agencies, simply cannot afford to operate with yesterday's assumptions. Their clientele EXPECT--or should expect--so much more.

This all relates back to the responsibility factor that exists in educational media services. In order to be effective...in order to be in the proper vanguard position, ready to serve the legitimate expectations that students harbor...educational media services need to look to those student needs and assumptions--and build materials and services to deliver what is expected and may one day be demanded. In order to fulfill this Candide approach, several other factors are imperative.

The Ability to Take Risks

There is no gain without risk-taking. "Safe" collection building and equipment selection is based on what is known and is often rooted in tradition. It is easier to wait for "the" format, for the "winner" in a type of hardware, for someone else to experiment and find out, before jumping in precipitously.

Unfortunately, while definitive formats are eagerly awaited and progress within the media service may be in a holding pattern, more and more new technological developments occur. The educational media service which has remained in neutral gear has been depriving users of access to existing formats--and may become increasingly perplexed as development piles upon development.

The educational media service that would be on the cutting edge of innovation is the one that can best tolerate ambiguity, feels free to take risks, and encourages personnel to walk tall and with confidence into the future--knowing that mistakes will be made, that every decision is not the best...but that knowledge is gained through misstep and that a poor decision is simply additional data which can be fed into a better decision.

Further, risk-taking can be exciting; it can lend dynamism and vitality to an institutional purpose. And risk-taking can be shared. Which leads to

Sharing and Cooperation

No educational media service can contain everything it may someday require. In today's world, this is not an option. Therefore, the sharing of resources--the cooperation among agencies--is not a sometime value, but a realistic need that focuses on the comprehensive provision of materials and information that will service the user of today. It is imperative that systems of interlibrary loan and procedures for borrowing across jurisdictional lines become commonplace rather than unique. The kinds of opportunities and crises which assail the existence of every individual are not easily dealt with and require the professional aid of educational media services, public libraries and every other form of information agency that is legally accessible.

The ideal scenario, from the user's point of view, would be the universal borrower's card--the key to accessing any type of library/information agency. From the library's perspective, this scenario needs to be extended into the realm of collection-building. It is one thing to share existing resources among agencies; it is quite another to PLAN together and establish non-duplicative areas of concentration.

There are many possibilities to consider when approaching sharing and cooperation. The benefits far outweigh any issues concerning turf, exploitation or politics. It is not an easy matter to dissolve old and hardened barriers, but the pursuance of the dream is worth the effort.

The Marketing Mistique

The capstone to planning, forecasting, building on assumptions, risk-taking and sharing is the marketing process. These elements are all incorporated into the process if it is correctly done.

Marketing is the relationship between service provider and consumer; it is a PROCESS OF EXCHANGE. The "4 P's", which are so commonly found in the literature of business, can be as readily applied to service industries:

Continued on page 34

MEDIA FOR AWARENESS

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☐ NATIVE AMERICANS
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Best in Category of Human Relations
National Educational Film Festival

☐ WOMEN IN THE WEST
Isabella, A Lady's Life in the Rocky Mountains (JH-HS)
Best of the Year, Learning Magazine
A-V Awards

☐ AMERICAN POETRY
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PRODUCT...The service provided; i.e., information, educational material, and so forth.

PRICE...The cost of providing the service in terms of both physical and human resources.

PLACE...How the service is distributed; this may include physical locations and/or delivery systems.

PROMOTION...The common definition of marketing, but in reality of only 25% of the process; this is the communication pattern between producer and consumer.

The major concept here is that of EXCHANGE--a two-way process which is predicated on the NEEDS of the consumer rather than the desires of the provider. In effect, the assumptions of the user are an integral part of the assessment of needs...which is part of the planning process...which also incorporates forecasting...and demands the ability to take risks in order to be innovative...and sharing of resources in the effort to give maximum service.

It all hangs together within a progressive marketing perspective. The educational media service that wishes to be accountable, to be able to readily justify its existence, must develop well-thought-out strategies for coping with change--both as an institution and as a critical coping resource for its users.

Information is power. The dynamic educational media service can function as access to this power and as an instructional mechanism that equips students to seek out their own sources of power in whatever formats are available. Today was the future just moments/hours/days ago. The future is not to be feared--rather, it should be anticipated and planned for. The educational media service has an important role to play in the '80s--and far beyond. It is up to the media/information professionals to RECOGNIZE this importance, to BELIEVE DEEPLY in their relationship to power, and to CONVINCE users, faculty, administrators, funders, and the world, if need be, of the essential nature of their services.

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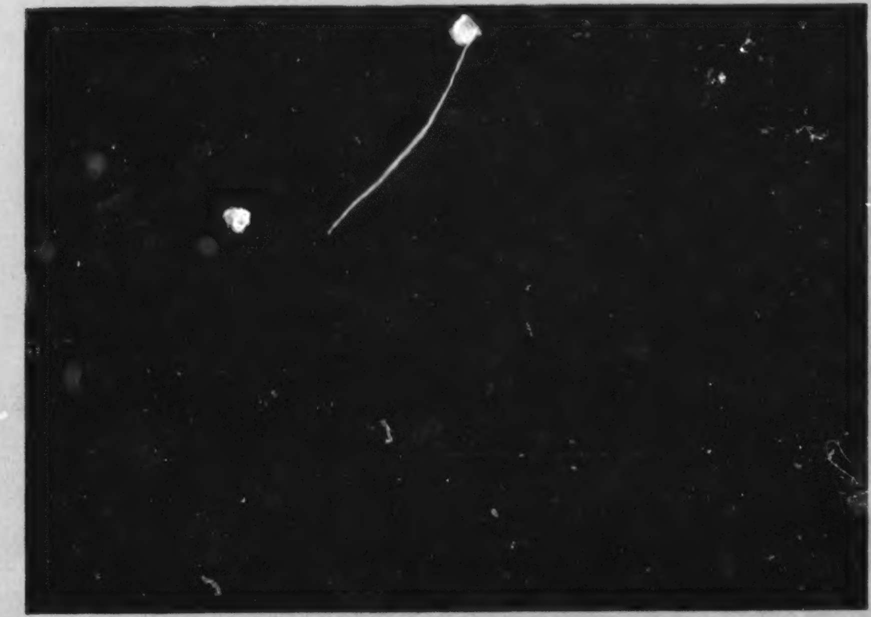

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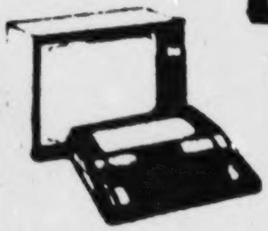

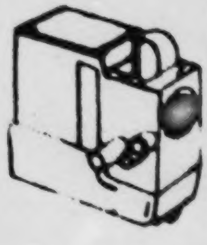

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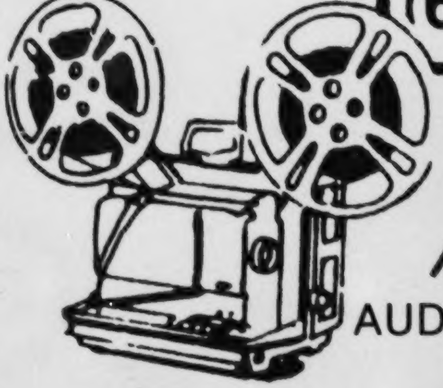

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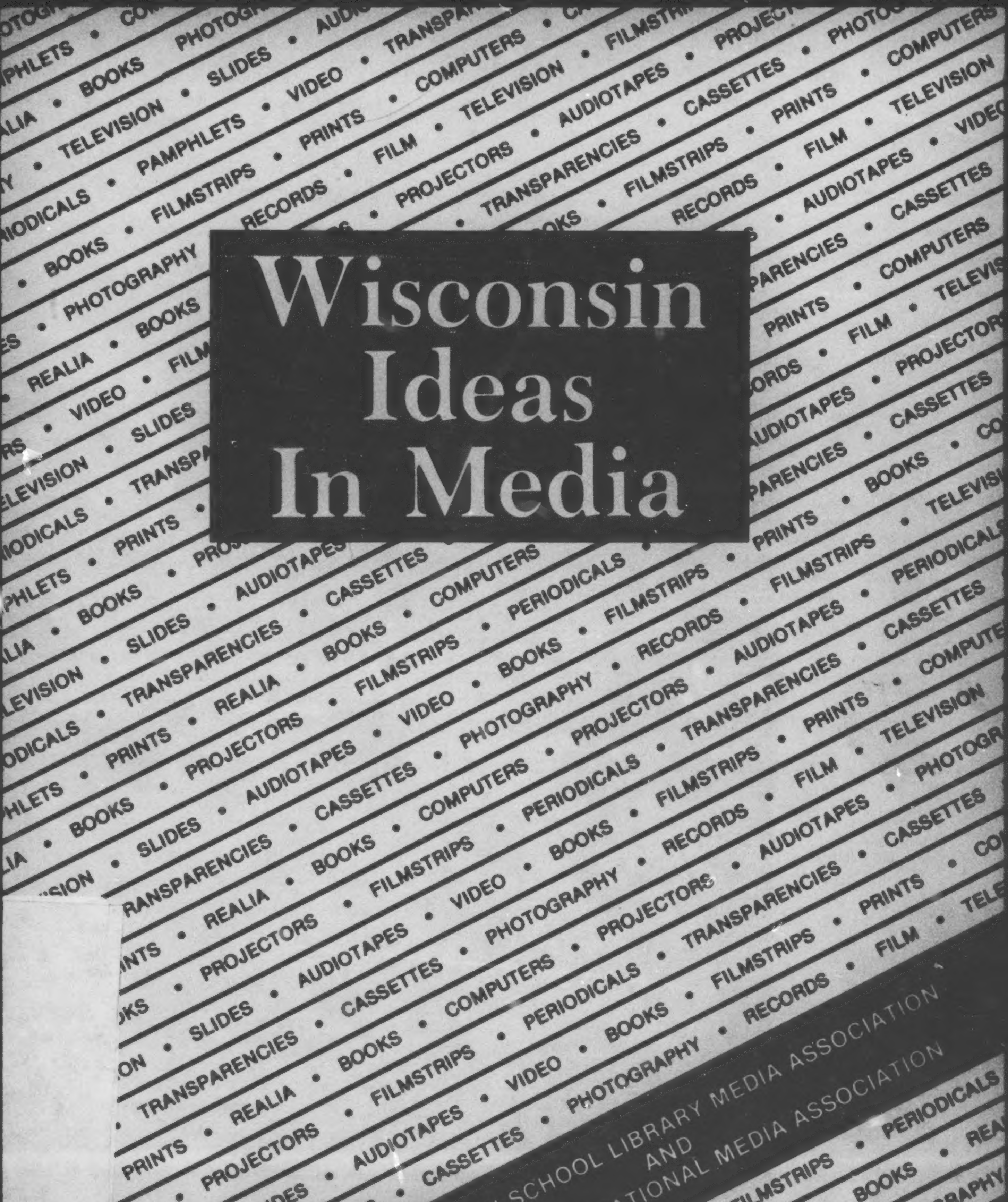

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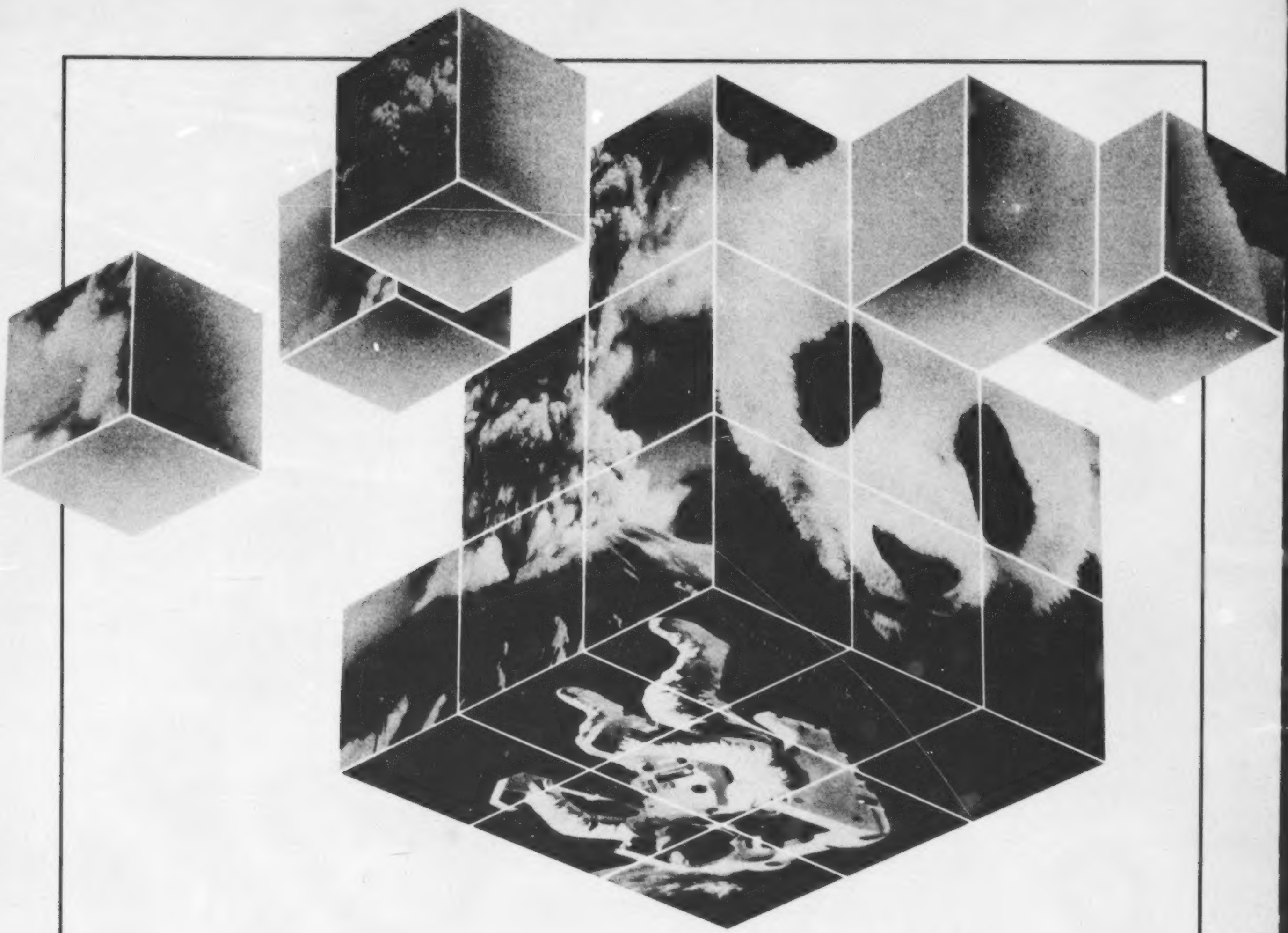

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Strategies for Doing More With Less

MICROCOMPUTER SOFTWARE ON A LIMITED BUDGET
by Michael W. Vail and Jeralynne Hawthorne 3

NASA LEWIS RESEARCH CENTER'S SERVICES TO EDUCATORS
by R. Lynn Bondurant, Jr. 6

DESIGNING MICROCOMPUTER MATERIALS FOR CLASSROOM USE: A TEAM APPROACH
by Carole Roslak 8

TALES - TO - GO
by Francha Barnard and Susan K. Kuck 10

THE FUTURE AS CONTEXT FOR EDUCATIONAL CHANGE
by Charles W. Case 12

THE VIRGIL/SANDMAN LETTERS
collected by Dean Markwardt 14

PERSPECTIVES ON A NEW POSITION AT THE DPI
by M. Elaine Anderson 17

FUNCTIONS, BENEFITS AND JUSTIFICATION
by Harry Zimmerman 18

WBSD-FM: STUDENT OPERATED RADIO
by Terry A. Havel 20

IMAGINATIVE GIFTED AND TALENTED PROGRAMS: ITS ALL IN THE APPROACH
by Ann Canarie 22

INTERACTIVE MEDIA SYSTEMS
by John A. Grozik 24

INTERLIBRARY COOPERATION: A CASE STUDY
by Roger Krenz 25

CONTINUING EDUCATION CLEARINGHOUSE
by Richard Sorenson 27

IMPLEMENTING FREEZE-FRAME TELECONFERENCING IN WISCONSIN
by Marcia Baird 28

COMPUTER EDUCATION IN APPLETON
by Jim Klein 32

Lee Sobania

Connie
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WISCONSIN IDEAS IN MEDIA

Strategies For Doing More With Less

Faced with the multitude of social, economic and environmental changes effecting our schools, media professionals continue to upgrade their skills and develop new strategies in order to creatively approach the many challenges of education in the 80's. This fifth edition of WISCONSIN IDEAS IN MEDIA is a generous sharing of such ideas, research and program successes which we hope will stimulate and inspire.

the editors

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Microcomputer Software on a Limited Budget

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Kankakee, Illinois 60901

Faculty and administration all over the country seem to be in constant turmoil over access to microcomputers on college campuses. Faculty and students in non-computer science departments are clamoring for increased access to microcomputers for instruction, word-processing and simulations. At the same time, administrators are trying to hold down the cost of educating students.

This raging argument led to a compromise on our campus that may help in your situation. The Learning Development Center has served the non-computer science departments with a combined microcomputer lab and centralized software circulation library. This arrangement has provided computer access for instructional purposes and held down costs of equipment, software and the personnel to oversee departmental computer labs.

In this article we will describe our experiences operating the lab and selecting software. We will also suggest some ideas for locating information about microcomputers and software.

Why Are Microcomputers In The Learning Development Center?

Experience has shown that during hard economic times many services must be combined and some facilities must be centralized in order to streamline operations and still meet needs. The Learning Development Center has become a centralized facility supplying microcomputing capability to academic departments. This procedure has allowed all departments accessibility to computer technology while making the most efficient use of departmental and institutional funds.

The primary goal of the Center is to promote academic success of students with a wide range of abilities. Microcomputers are one tool we utilize to meet this goal by remediating deficiencies in entry level skills and by providing supplemental instruction.

How Are Software And Hardware Logistics Handled?

Hardware

The Learning Development Center at Olivet shares a large commons area with the campus media center and curriculum center on the lower level of the campus library. Placing the microcomputers in this commons area has allowed student access to microcomputers whenever the library is open without the need for additional staff or student time to oversee computer use.

When the microcomputers were first placed in the Center, a priority system based on their intended use was established. Highest priority was given to student users who had been assigned computer assisted instruction by the Learning Development staff or by professors. Faculty members working on word processing, record-keeping, or research projects filled the next priority level. Finally, if time was available, it was allotted on a first-come, first-served basis for general computing by faculty or students.

While the Center has maintained the same priority system, the "bumping" procedure described above had to be modified. Students were reluctant to ask others to give up a computer even for legitimate priority reasons. The Center settled on a reserved-time procedure. Students and faculty may now reserve time in one-hour blocks up to two days in advance. If someone has reserved a machine, they must arrive within ten minutes of their reserved starting time or they lose their reservation.

Elementary Secondary Education Act (ESEA) Software

The Center also serves as a centralized software library. Funds for the purchase of software have come from Elementary Secondary Education Act (ESEA) Title III funds, campus instructional funds, and individual departmental budgets. By having all computer software centrally located it is possible to avoid unnecessary duplication of software purchases and to control unlawful infringement of copyright laws. When additional copies of software are needed for departmental use outside the Learning Development Center, the Center attempts to get permission from software producers to make additional copies for campus use. If that fails, the Center asks for a discount for multiple purchases of the same software. When permission cannot be obtained, another copy of the software must be purchased.

Software circulation is handled at the check-out desk of the commons area. Students select the software they wish to use and trade their campus ID cards for the diskettes and documentation. The software is to be used only in the Learning Development Center. When possible, only backup copies of the software are circulated and original diskettes are kept in storage for archival purposes. Circulation records are maintained and then included in annual reports or sent to professors who have assigned the use of the software.

How Does One Select Computer Software?

The steps for selecting computer software are virtually the same as the steps for selecting any learning center materials. They must begin with the establishment of overall center objectives. Questions such as what needs should we address, who is our clientele, and what are our present resources, must be answered by the institution and the center staff prior to any materials selection. After these questions have been addressed, the staff must determine what methods can be supported to meet the defined clientele needs.

Keep in mind that just because something **can** be done with a computer does not mean that it **should** be done by computer. The computer is a tool that handles some things very well, but it is just one tool. Weight the advantages and disadvantages of utilizing computers instead of manual systems. Then, determine which of the center's primary objectives should be managed by computer and search for software that will meet those objectives.

Software catalogs, software reviews, magazine articles and advertisements, software directories, and local computer stores are sources of information on software. A list of some helpful sources is provided at the end of this article.

Previewing instructional materials is always a good idea, but software producers are reluctant to allow software preview because of the ease with which the material can be copied. The best sources for previewing materials are local computer stores. Local independent and franchise dealers will do their best to order materials in which interest is expressed. Spend time cultivating a good relationship with the sales personnel, and be selective when requesting previews. Finally, provide the dealer with an evaluation of previewed materials whether or not they are purchased.

The Center divides microcomputer needs into two categories: administrative functions and instructional functions. The primary administrative use of microcomputers is as a word processor. The time spent learning to use a word processor will pay for itself a hundred times a semester. The Center staff has also used the microcomputers for record keeping (data base management) and statistical analysis of data. While all of these functions may prove beneficial, do not overlook the time required to initially learn to operate the systems and input data. The chart, Support to Departments, illustrates the variety of services provided through the Center and shows the large number of departments with which we work.

Microcomputers have been beneficial in three instructional areas: drill and practice, tutorial, and simulation. With the proper software, microcomputers can monitor student learning during drill and practice exercises and adjust the level of the exercises automatically to the proper skill level of the students. In mathematics and grammar reviews, this is particularly important to maintain student interest and effectively use available learning time. In addition, with the proper software, microcomputers can offer tutorial instruction automatically tailored to the level of the student and to defined learning outcomes.

Simulation is potentially the most beneficial instructional use of microcomputers. Again, with the proper software, microcomputers can allow students to experience situations that may be too expensive, too time consuming or too dangerous to experience in any other environment.

What Are We Trying To Say?

Microcomputers hold the potential for being a great benefit for administrative and instructional functions in learning development centers, but, like any "great potential", they must be carefully examined and managed. Learning center staffs must maintain an active role in determining when and how microcomputers will be utilized in the learning process, for without proper management, the microcomputer can become a liability rather than an asset.

INFORMATION SOURCES

The APPLE II Blue Book, WIDL Video, Chicago, 5245 W. Diversey Ave., Chicago, IL 60639.

Classroom Computer News, Intentional Educations, Inc., 341 MT. Auburn St., Watertown, MA 02172.

Classroom Computer News Directory of Educational Computing Resources, Intentional Educations, Inc., 341 Mt. Auburn St., Watertown, MA 02172

Condult Abstracts, Conduit, P.O. Box 388, Iowa City, Iowa 52244.

Electronic Education, Suite 220, 1311 Executive Center Drive, Tallahasee, Fl 32301.

Electronic Learning, Scholastic, Inc., 50 West 44th St., New York, NY 10036.

EPIE Institute, Teachers College, Columbia University, Box 27, New York, NY 10027.

InCider, 1001001 Inc., 80 Pine St., Peterborough, NH 03458.

Pipeline, Conduit, P.O. Box 388, Iowa City, Iowa 52244.

Technological Horizons in Education Journal, Information Synergy, Inc., P.O. Box 992, Acton, MA 01720.

TRS-80 Educational Software Sourcebook, Radio Shack, Tandy Corporation, One Tandy Center, Fort Worth, TX 76102.

TRS-80 Microcomputer News, Radio Shack, Tandy Corporation, One Tandy Center, Fort Worth, TX 76102.

80 Micro, 1001001 Inc., 80 Pine St., Peterborough, NH 03458.

SUPPORT TO DEPARTMENTS

	biology	business	chemistry	comp sci	dietetics	comm	geology	history	math	media	music	nursing	phys ed	psychology	religion	sociology	ICM	LDC
Instructional Programs	▨	▨	▨	▨	▨				▨		▨							▨
Classroom Demo		▨		▨	▨				▨						▨	▨		
Course Assignment			▨	▨	▨				▨						▨			
Classroom Management	▨	▨	▨				▨	▨	▨							▨		
Word Processing	▨	▨				▨	▨	▨	▨	▨		▨		▨	▨	▨		▨
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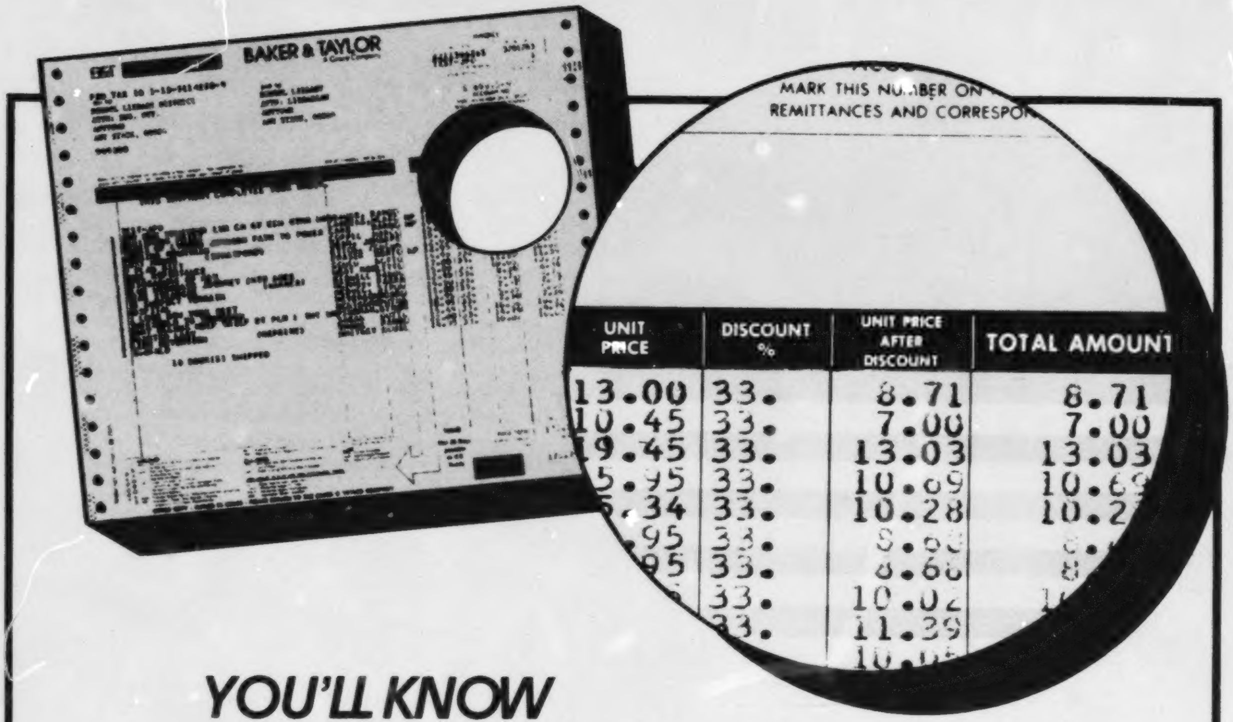
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NASA Lewis Research Center's Services to Educators

by R. Lynn Bondurant, Jr.
Chief, Educational Services Office
NASA Lewis Research Center
Cleveland, Ohio

Introduction

When chroniclers of history look back on the 20th century, many usual events will be recorded like world wars and assassinations of several world leaders. But most significant will be those scientific discoveries which forever changed the way we lived like the advent of television and great advancements in medicine. No doubt the greatest accomplishment of all will be the advancements in flight from Kitty Hawk to the moon. A significant number of the accomplishments listed for the 20th century will be a result of research carried out by the National Aeronautics and Space Administration (NASA) during its first 25 years. Included will be six manned lunar landings; development of weather, communications, and scientific satellites; exploration of Mercury, Venus, Mars, Jupiter and Saturn; and advancements in aeronautics. Much has been accomplished during NASA's first 25 years.

NASA was created by Congress in 1958. The National Aeronautics and Space Act provided the framework for the creation of a civilian agency whose mission was to peacefully explore space for the benefit of all mankind. Writers of the Space Act had foresight when they required that NASA was to work with the educational community. This vision became a reality with the establishment of The Educational Services Office (ESO) of the NASA Lewis Research Center. The Lewis ESO works with educators in Minnesota, Wisconsin, Illinois, Indiana, Michigan, and Ohio. The following is a list of services for educators. For more detailed information about any of the described services, please write the Educational Services Office at Lewis. The address is listed at the end of this article.

Lewis ESO Services to Educators

Visitor Information Center (VIC) The VIC is the nucleus for visitation programs to Lewis. Besides presentations, films, and special programs there are about 9,000 sq. ft. of exhibits. The exhibits highlight achievements in aeronautics and space exploration. Displays are divided into 8 galleries. Each has a different theme: Our Servants in Space, Exploring Space, Terrestrial Energy, Propulsion, Flight in the Atmosphere, Technology Utilization, Materials Research, and Space Shuttle. Group visits can be scheduled in advance. Tours of selected research areas can be arranged for groups of 20 or more high-school age or older persons. The VIC is open daily and there is no admission charge.

Teacher Resource Room (TRR) The TRR is a unique facility designed to serve educators in the six states Lewis serves. Available in the TRR is a collection of resource materials that can easily be integrated into the instructional program. Resources include 35mm slides, audio cassettes, audio cassettes/slide programs, lesson plans, NASA publications, videotape programs, a film clip library, and ideas for classroom activities and demonstrations. Educators select the resources they need. Slides are copied at cost. Videotapes are duplicated at no charge; the teacher provides blank videotapes. Lesson plans can also be duplicated. At present Lewis is beginning to establish plans for satellite TRRs in our six state area. These satellite TRRs will enable more educators to be served near their homes.

Materials of Instruction available from NASA are quite varied. Curriculum supplements highlight many areas of instruction such as chemistry and industrial arts. Some of the supplements include a host of activities to do in the classroom related to the teaching of air and space concepts. In addition, there are wall charts, lithos, informational booklets, NASA Facts, and educational briefs. A **NASA REPORT TO EDUCATORS** is published quarterly. To receive the **REPORT** the educator must be on the NASA mailing list. A publications catalog and mailing list card are available upon request.

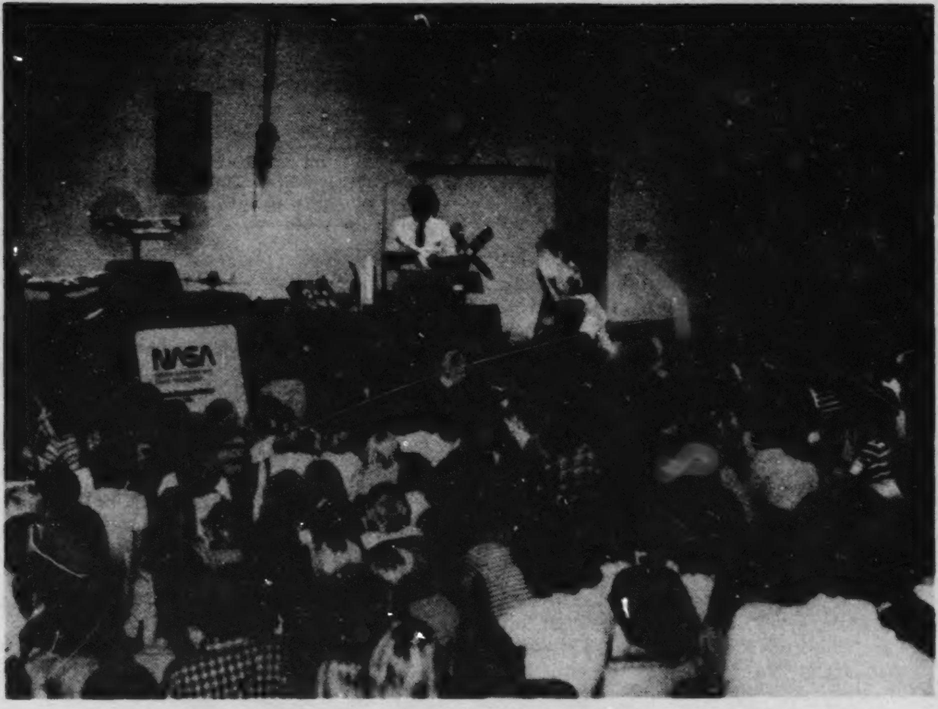
Films (16mm) are available describing NASA research and development programs and achievements in space and aeronautics, and the results of this research. These films may be borrowed for showings to educational, civic, industrial, professional, youth and similar groups. There is no rental charge; however, the borrower must pay the cost of return postage and insurance. A film catalog is available upon request.

Teacher workshops and inservice programs are an integral part of the educational programming at Lewis. Each summer Lewis co-sponsors teacher workshops with various colleges and universities in our six state region. Lewis sends one of its aerospace education specialists to conduct a 3-5 day program at each of the co-sponsoring institutions. If anyone knows of any college or university in the Lewis area that might like to co-sponsor a teacher workshop please have them contact the Educational Services Office at Lewis. Beginning in the fall of 1983 teacher inservice programs are going to be a major thrust of the ESO Office activities. Lewis will send an aerospace education specialist to work with teachers in a school district on the many aspects of NASA.

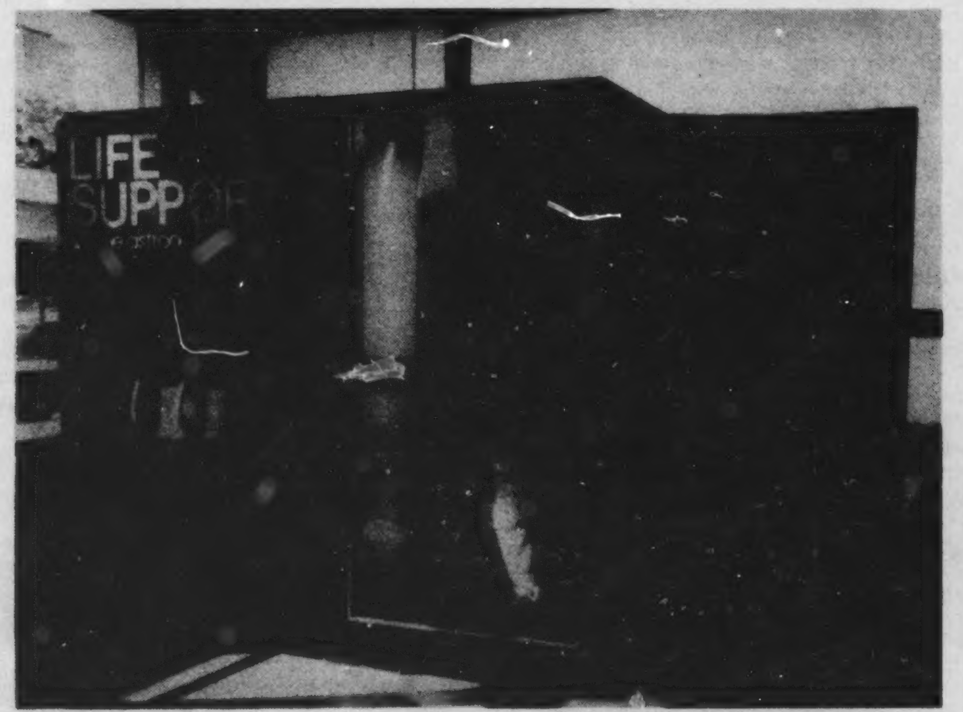
Student Programs can vary from year to year. Two programs that the ESO office currently supports are the Space Shuttle Student Involvement Project (SSSIP) and science fairs. The SSSIP is a project that is co-sponsored by the National Science Teachers Association and NASA. The SSSIP is open to 9-12 grade students. In the SSSIP students propose experiments to be conducted by the Shuttle astronauts in space. A regional symposium is held at Lewis each year. Forty semi-finalists and their teachers spend two days at Lewis where mentors assist each semi-finalist to refine his/her proposal. From the 200 semi-finalists up to 20 finalists are selected nationwide each year. For science fairs Lewis provides awards for excellence in aerospace related projects to regional and state science fairs, and to the International Science and Engineering Fair. During the summer Lewis invites all of the regional science fair winners to Lewis for a VIP visit which includes presentations and a tour.

Presentations can be provided by Lewis scientists and engineers on a host of subjects. The Lewis speaker can come to Wisconsin depending upon availability of travel funds. Arrangements for speakers is made through the Lewis Speaker's Bureau. During the next academic year Lewis is going to begin a telelecture program. In a telelecture there is a two-way telephone hook-up. The visuals to be used during the telelecture are sent to you in advance. From his/her office the Lewis scientist or engineer can address your classes. The scientist, for example, will have a duplicate set of slides which he narrates from his office. The students have a chance to ask questions during the telelecture.

Community Involvement Programs (CIP) are a joint program with a community, a school system, and Lewis. Included in a CIP are such activities as exhibits, presentations



Aerospace Education Specialist, John Hartsfield, does a Spacemobile presentation for elementary school age students highlighting NASA's research and activities.



One of the Lewis exhibits available for display at special programs and events.

(Continued on page 34)

Designing Microcomputer Materials for Classroom Use: A Team approach

by Carole Roslak
IMC Director
Yahara School
Stoughton, Wisconsin

One of the current challenges when using computers in the schools revolves around the kind of software available to educators. Curriculum adaptive programs are difficult to find, expensive to purchase, and involve inefficient use of teacher-time to produce. Integration of microcomputer technology into existing curriculums requires a spectrum of education/technical knowledge that few administrators or teachers possess. Using the computers' full potential for providing quality education in a time of reduced budgets and staff invites a creative response, a new program perspective for matching technological potential with a cost-effective program delivery design.

This article outlines a theoretical model of a program design scheme that has been adapted from a plan originally developed by Rosemary Fraser, Colin Wells, and Sue Burkill as reported in the January, 1982 TECHNOLOGICAL HORIZONS IN EDUCATION. This theoretical model relies on the integrated use of personnel from within a school district who have teaching expertise and curriculum knowledge, plus the addition of an education oriented computer programmer, to form a Computer Materials Design Team. The cost of a computer programmer to a small school district will probably never be recovered through the savings in software purchases that will not have to be made. The model in no way attempts to discover the optimum school district size that would support the addition of a full time programmer at $0.00 cost to the district. It does attempt to discover an educationally sound, managerially feasible, and fiscally responsible design for getting high quality curriculum-matched computer software into the classroom.

It has been documented that it takes approximately 100 hours of programming to develop one hour of a usable computer program.[1] It is not cost effective to have classroom teachers become proficient programmers in order to have curriculum adaptive software for their classrooms. It is cost effective, however, to have classroom teachers as part of the design team for creating software that will be used in their own classrooms.

The design team I am proposing incorporates the following:

1. A curriculum co-ordinator.
2. A computer programmer.
3. A team teaching unit leader.
4. Interested teachers within a team teaching unit.
5. Pupils.

The five members or components of the team interact within a four loop system (See accompanying illustration) that proceeds from design of the material to the actual development of the material and its trial use in the classroom. The culminating loop is the publication of the software and its documentation for widespread use within the school and possibly for dissemination to other systems.

Within the team, the curriculum co-ordinator must have the most comprehensive perspective. He or she must be experienced in teaching with and without a computer, and in addition to being knowledgeable about all aspects of the school's curriculum, must also know how to create new materials for widespread use.

The computer programmer must have the technical knowledge the other team members can draw upon. This includes knowing the potential of the kind of computer being used, knowing good software standards and how they apply to education, and having the programming skills required to produce quality programs designed to specific requests.

In addition to the technical skills, a program designer in a school system needs to know how children learn, and must have an understanding of the workings of a classroom environment. It almost appears that such a person would have training as both a teacher and a computer programmer.

The triumvirate of curriculum co-ordinator, computer programmer, and unit leader needs the input of pupils and classroom teachers to fully test any program model developed. Only after a program has been used in various circumstances with a diverse array of users can one be sure of it meeting the educational objectives and meeting the curriculum and software standards of the school district.

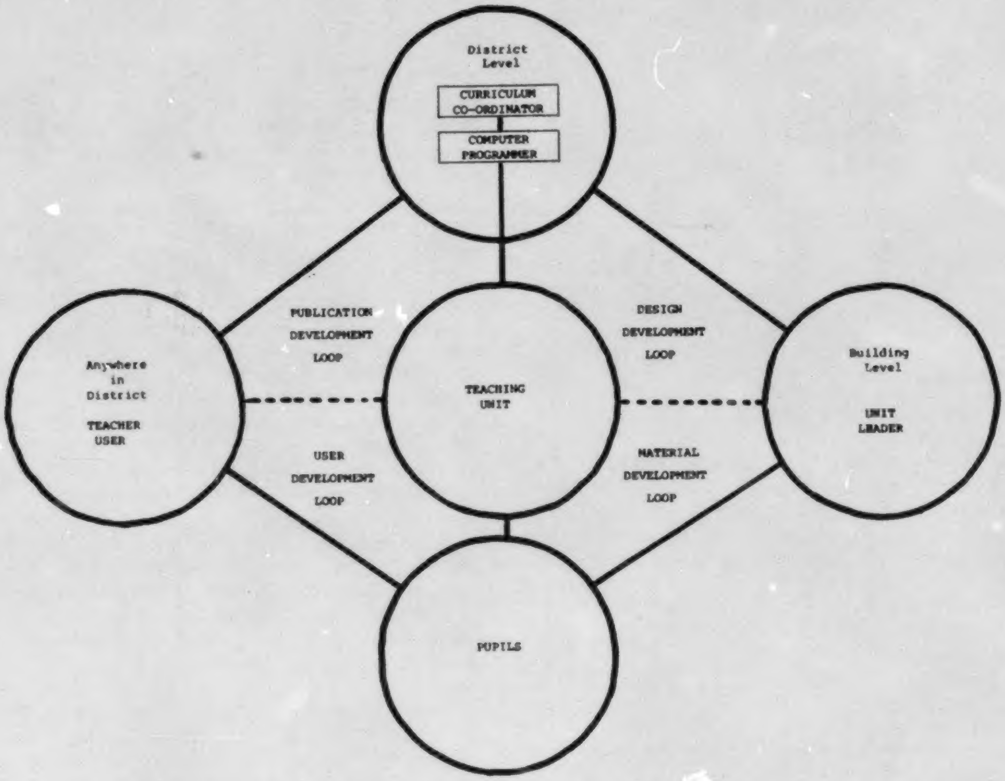
The following is an outline of the four loops in the plan. If used with the illustration provided, it should lead to an understanding of the total design.

I. Design Development Loop
   — Curriculum coordinator consults with Unit leader and Programmer. Members of the teaching unit may be included.
      1. Outline educational objectives.
   — All three develop initial design of the teaching unit that will include use of the microcomputer program.
      1. Draft design of program drawn by programmer.
      2. Write initial draft of teaching notes.
   — Programmer creates program to meet educational objectives, working closely with teacher and coordinator.
   — Project results in computer program designed for full classroom testing.

II. Materials Development Loop
   — Materials are used in the classroom by the Unit leader or by the teacher who initiated the materials development.
      1. Curriculum co-ordinator and programmer observe many lessons in the classroom OR consult regularly with the teacher who is observing the materials being used in the classroom.
   — Flexibility and adaptability of materials are noted.

III. User Development Loop
   — Teacher user is anyone who is likely to want to use the material when it is completed.
   — Material circulated to many classrooms.
      1. Curriculum co-ordinator assesses unfamiliar users' reactions to the program.
      2. Assessment done by questionnaire or by trained observers.
   — Program is adjusted by programmer as necessary to meet objectives and maintain standards.

IV. Publication Development Loop
   — All team members except the pupils are involved in determining whether the program as designed and adjusted meets all the necessary objectives and standards and warrants publication.
   — If publication proceeds, the curriculum co-ordinator may seek editorial assistance for the final draft of the teacher notes and complete documentation of the program.
   — Programmer makes master program and back-up for curriculum co-ordinator.
   — Program is added to computer software collection.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Level
CURRICULUM
CO-ORDINATOR
COMPUTER
PROGRAMMER
PUBLICATION
DEVELOPMENT
LOOP
DESIGN
DEVELOPMENT
LOOP
Anywhere
in
District
TEACHER
USER
TEACHING
UNIT
Building
Level
UNIT
LEADER
USER
DEVELOPMENT
LOOP
MATERIAL
DEVELOPMENT
LOOP
PUPILS

A Production Plan for developing classroom-use Microcomputer materials.

This computer software production model makes use of specific staff expertise and relies on a thorough pupil testing before publication. Because programs are created upon teacher request, the software has a great likelihood of having a high use-rate after completion.

Cost effectiveness can be increased by publishing successful programs or selling them to other school districts. It also might be possible to work with publishing companies, giving them publishing rights to all school district produced programs.

Quality computer software is essential for schools if they are to maintain credibility in the use of expensive technology in the education process. Perhaps this team approach model for developing materials will be a building block for that credibility as it raises the quality of classroom computer materials.

---

[1] "Applications of Microcomputers to the Education of the Gifted: Meeting an Instructional challenge with Computer Literacy." **Technological Horizons in Education,** Vol. 7, No. 4. May, 1980. p. 40.

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Tales-To-Go

by Francha Barnard
Librarian at Jackson and Mapledale
Schools, Sheboygan
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and

Susan K. Kuck
Librarian at Urban Middle School,
Sheboygan
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Children's librarians, in both the school and the public libraries, deal in a product—literature. The quality of the product and the way in which it is merchandised determine, in a large part, children's attitudes toward it. Does this begin to sound like a sales pitch? Well, maybe it is. Acknowledging these premises helps to clarify our mission as librarians. Through experiences with good literature, we can instill in children a sense of wonder and joy, of humor and adventure, of "connectedness" to the larger world around them. These attitudes, formed early, will remain with children as they approach literature later in life.

In these days of ever-tightening budgets, school Instructional Materials Centers (IMC) and public libraries alike are being expected to stretch limited dollars to cover ever-increasing expenses. Limited dollars affect both purchases and staff. The creation of TALES-TO-GO, multimedia story hour kits to be used by group leaders, is meant to ease that budget crunch.

The dilemma of getting the best children's books into the hands of those who work with children prompted the request for funding to develop storyhour kits which would circulate to adults who work with groups of children. Ironically, similar requests came from three different parts of the state at the same time. During early 1980, three Wisconsin library systems, Sheboygan County Federated, Mid-Wisconsin Federated, and Northwest submitted similar grant applications to the Division for Library Services for Library Services and Construction Act (LSCA) monies. All three systems' requested funding for the development of multi-media kits to be used by adults in presenting storyhours to groups of children. In awarding the funding, the LSCA advisory committee decided to try a unique approach. The kits would be developed in one system and distributed for use in all three.

Sheboygan was designated as the system which would produce the kits with David Weinhold serving as administrator of the project. Fond du Lac Public Library, headquarters library for Mid-Wisconsin, would produce the printed material under the direction of the project coordinators. Representatives from each of the participating systems worked with us, the project coordinators. It was decided that we would job-share the half-time coordinator's position, another uniquely successful arrangement.

Forty kits, each with a different theme, would be produced for both Sheboygan and Mid-Wisconsin. Ten of the forty would also be produced for Northwest. Each kit would include books, filmstrip/cassettes, taped puppet plays and/or flannelgraphs, fingerplays, poems and 16mm film recommendations. Films could be borrowed from collections at either Mead Public Library in Sheboygan or Fond du Lac Public Library. Return postage for those films and kits which required mailing was awarded in the grant to be used until funds ran out. Workshops would be presented in each system to acquaint potential users with the kits.

Included in each system's application had been requests for audiovisual hardware to insure maximum use of the kits. Sound filmstrip projectors, 16mm projectors, screens, hook and loop (flannelgraph) boards and portable puppet stages were ordered for each system. This equipment could be borrowed with the kits.

Selection of the forty themes for the kits was done first. This task was made easier by surveys which had been taken for the grant applications. These surveys had been sent to system libraries, schools, day care centers and other organizations which meet with groups of children regularly. Kits on holiday themes were especially requested, as were such perennially popular topics as dinosaurs, giants, families, and various animals. These themes were chosen along with folktales from various cultures, award winners, birthdays, monsters and dragons, and similar high interest topics. During development of the kits, some original themes fell by the wayside while others were combined to allow inclusion of outstanding material. Clear, simple names were given to the kits to make reserving them easier.

Respondents indicated that storyhours they had planned usually took from 15 to 45 minutes. In designing the kits, we selected more than enough materials to use for the longest of these storyhours. The intention was to allow the storyteller some choice even within the kit. The user of the kit was also encouraged to use materials from his/her own collection with the kits.

Titles of books for the kits were chosen from recommendations of librarians, book selection guides and reading lists. Appropriate sound filmstrip titles were also chosen. When possible, the book version of the filmstrip was also included in the kit, allowing the storyteller a choice of media for presentation.

One of the heartbreaks of children's librarians is knowing how quickly books go out of print. In order to include some of these favorites, we chose them as flannelgraphs or puppet plays if they were appropriate. A script was then included for these out-of-print titles. We recorded all puppet plays on cassettes adding music or sound effects where needed. We produced the flannelgraphs on heavy weight water color paper, adding velcro to the backs of all pieces for use on hook-and-loop boards or on flannelboards.

A local dollmaker was commissioned to create puppets for the puppet plays. Since, in many cases, only one storyteller will be using the kits, two puppets were the maximum that could successfully be manipulated for one story. In most puppet plays, therefore, only the two main characters appear as puppets. Backdrops and props provide additional characters and settings.

Obtaining necessary copyright permission for each flannelgraph and puppet play became the single most time-consuming and frustrating aspect of the project. Many publishers and authors were gracious and prompt in responding to requests, but some ignored repeated correspondence and telephone calls. Often, the original publisher no longer held permission rights; they had reverted to the author or to a third party. Further correspondence was then necessary to determine who held the copyright. Ultimately, no one refused permission, however, some titles were eliminated because of a lack of response by authors or because the publisher wanted to charge a fee.

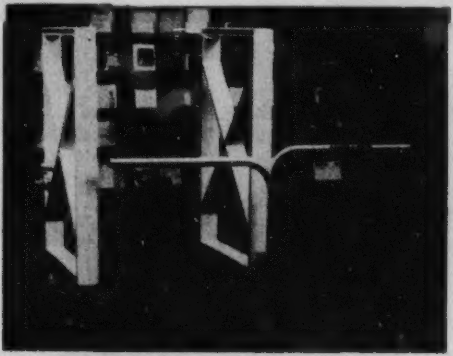
The title for the kits, TALES-TO-GO, and a design for publicity were then chosen. Because the kits would be circulated in small, suitcase-like boxes, a title that indicated a readiness to travel (along with some allusion to storyhours) seemed most appropriate. The idea for the suitcase logo originally came from Paddington Bear.

During the summer, we scheduled a series of hands-on workshops to introduce potential users to the kits and to renew a zeal for storytelling with young children. After briefly reviewing the project's background, we then encouraged browsing through the kits which were on display. Each type of media in the kits was demonstrated and tips on successful storyhour strategy were shared. Attendees were encouraged to try their hands (literally) at using the items from the kits to present stories to each other.

When circulation of the kits started September 1, 1981, the response from library patrons exceeded our expectations. In addition to librarians and teachers, day care leaders, playground supervisors, church groups and Girl Scout leaders used the kits on a regular basis. At Sheboygan's St. Nicholas Hospital, candy-stripers present a storyhour every week for children on the Pediatrics floor using TALES-TO-GO kits. It has been most refreshing to see the kits being used in so many creative ways.

In 1982 Sheboygan County's circulation of the TALES-TO-GO kits was 560. Because of the popularity of the kits, we were rehired as consultants to create ten more kits during the summer of 1982. Christmas III, Halloween II, and Emotions II were created to meet the high demand for these topics, as well as new topics such as health, old age, music, and sports. We were hired again in 1983 to do an additional ten kits for Sheboygan. At this point, there are 60 kits available.

As we presented workshops throughout the state during the last two years, the questions repeatedly asked were "How can we get these kits?" and "Where can we buy them?" Libraries, schools, or other interested parties can purchase the kits through the Sheboygan County Federated Library System. An indexed bibliography of the kits is also available. Persons interested in more information can write to TALES-TO-GO, Sheboygan County Federated Library System, 710 Plaza 8, Sheboygan, Wisconsin 53081.



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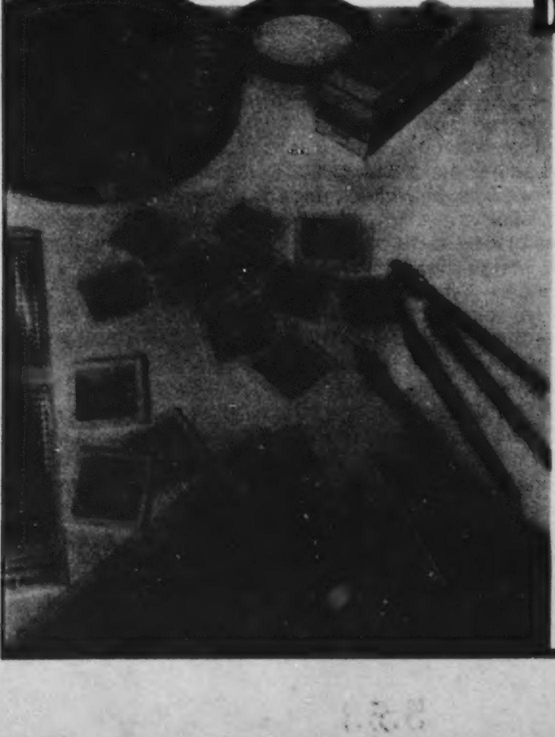

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by Charles W. Case
Dean, College of Education
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Iowa City, Iowa

The Future as Context

Editor's Comment: The following is a speech presented by Dean Case at the 1983 WEMA Spring Conference in Appleton, Wisconsin on March 25, 1983. The decision to include it in this journal was made on the basis that it offers a thought provoking challenge.

Allow me to share with you a view of the context within which we as professional educators are attempting to operate.

The first set of context variables that concern me regard our global interdependency. In the late sixties and early seventies we became very aware of:

1. Popluation Growth
2. Inequitable Distribution of Food
3. Population
4. Finite Resources

As the political sands changed and our economic downturn began, we ignored all of the above because restrictions on corporations, individuals, and communities interfered with profit and personal desire. Yet these problems are still very much with us.

In the late seventies and early eighties, we are more aware of the intertwined economies of the world as inflation and low productivity continue worldwide. Throughout the world many people are internalizing the horrors of the possibility of nuclear war. Yet most nations are headed by officials who choose to ignore all of these variables, the interconnectedness among the variables, and global interdependency.

The evidence continues to mount to support those earlier conclusions. Nicholas Robinson has recently noted that most countries now agree that the following trends are very much in motion:

> Trends show inadequate clean water, sanitation, basic housing, jobs, education and health services for the additional billion inhabitants to be born over the next 20 years.
>
> Loss of prime agricultural land to development, erosion and desertification will mean the world creates only 4% more farmland than it has now.
>
> Food distribution patterns indicate North Americans will be able to increase their food consumption by 50%, but Africans must decrease their consumption and Asians keep theirs roughly the same (both of whom currently have inadequate food supplies).
>
> Fuel consumption patterns show prices escalating continuously as demand exceeds availability. Firewood demand will exceed supply by 25%, and energy for the new billion inhabitants will be hard to provide.
>
> Forests will continue to be destroyed at the rate of 18 million to 20 million hectares a year. Every two years the world will lose forest-cover the size of California: 40% of all forests in poorer nations will have been cut.
>
> As we lose forests and crowd out other species, we will cause the extinction of 500,000 to 2 million species — as many as one-fifth of the world's species.
>
> In the absence of effective pollution controls and land-use programs, water and air quality will deteriorate, the impacts of increasing carbon dioxide in the biosphere, decreasing ozone in the stratosphere and increasing pollution in the seas are too obscure to project, although damaging effects can be envisioned.
>
> Most of the new billion people will live in overcrowded city areas, where pollution will be concentrated.
>
> Security pressures will 'justify' continued committment of large sums to military capacity, although the 40,000 nuclear warheads already in the arsenals of a handful of nations are the equivalent of three tons of TNT for each person now alive.

"In cumulative effect, the many small insults to natural systems globally are approaching the threshold of irreversible damage to the biosphere. It will take many small but important remedial or preventive measures to avert permanent harm. Each person, village, state and nation must act to maintain the natural world, and every new child over the next 20 years must be educated for this stewardship."[1]

There are direct and immediate educational implications of these trends for education.

Are our current curricula preparing the young and adults for the global and societal transitions that are occurring due to trends in world population, industrialization, pollution, food production, and resource depletion?

The Club of Rome has published another report, **No Limits To Learning,** that addresses two concerns regarding future and present learning needs. First, it addresses the seeming inability of modern men and women to grasp what is happening with regard to world resources; that is, there is a failure to understand the mutations humans are causing in the natural environment and what such changes are doing to the human condition. Second, the report focuses on the question of whether or not human interventions can occur to thwart the present trends that threaten human existence. The authors plead for learning processes that will free the human resources of vision, creativity, and moral energy, and for a focus on learning that can bring change, renewal, restructuring, and problem reformulations.[2]

Are we yet providing learning experiences that teach persons how to evaluate the long-term consequences of present decisions or the need to consider second-order consequences of decisions? We provide extensive time in teaching people how to dissect whole into parts. But do we provide equal time for "systemic" thinking, the capacity to see the whole as well as its parts, to see multiple rather than single causes and effects, and the capacity to detect interrelationships among many parts and to assess their importance. It is imperative that curricula and learning opportunities assist people to develop these abilities if they are to have any opportunity to influence their individual and collective destinies.

The global transition that is occurring will require us to be able to make changes and adaptations in most aspects of our lives. Individually and collectively we will periodically redefine or reaffirm what really matters in our concept of the quality of life and what the real necessities of life are. Or stated more concretely, as educators at all levels of schooling, do our curriculums help students develop cognitive abilities that deal with comprehensiveness, complexity, and interrelatedness? Do our curriculums help students understand and respect the diversity among nations and cultures? Do our curriculums help students understand that any particular language structures thought in very particular ways? Are students given the opportunity to examine the social, political, and ethical consequences of starvation versus abundance, of nuclear war, etc.? Or are immediate political pressures and economic anxieties causing us to be safe and mute? Will our children be prepared to live in a much different world, or will we have prepared them for the best possible non-existent world?

If we spend our time in schools primarily emphasizing the 3 R's by themselves and vocational training that leads to non-existent jobs, we are dooming future generations.

for Educational Change

Secondly, let's consider our retreat from issues of civil rights. As a profession, along with others, we set out twenty years ago to make long-held American myths into reality:

1. Desegregation
2. Handicapped education
3. Bilingual education
4. Equalization of educational funding
5. Sexual equality

We accomplished our progress through legislation, the courts, and categorical funding. Categorical funding was necessary because most states and communities were not committed to these ends.

Now, under the guise of deregulation and local control, we are taking these advances apart piece by piece. What used to be Title I money to serve kids from disadvantaged backgrounds is now used to buy microcomputers.

It is possible that our profession only stands up for what is right during times of affluence?

The third set of concerns is what is happening inside of ourselves and the population at large. Here I will share with you some of the observations made by Dan Yankelovich.[3]

Through an examination of statistical trends and personal histories, Yankelovich has examined the change in personal values that have occurred over the last two decades. He characterizes our recent history as one that began in the self-denial ethic of the Depression and post-Depression era. It went through the me-only or self-fulfillment era of the sixties and seventies.It is now moving into a new "ethic of commitment", that is, new rules of living that support self-fulfillment through deeper personal relationships and more enduring commitments to the world of work and the business of common survival.

In the study it was found that 80% of the American public was caught in a triple bind as a result of being part of the three eras. First, they find themselves presented with an abundance of choices about what to do with their lives, without, however, knowing how to make the right choices. Often they value their personal freedom so intensely that they regard each new choice and commitment demanded of them as a threat to their freedom and a challenge to other possibilities they might also exercise. The question of what to commit to and sacrifice for thus remains forever open, making their lives unsettled.

Bind two, the same people desire forms of self-fulfillment and success that presuppose a cooperative economic and social environment. Their goals take for granted continuing affluence, abundant career opportunities, flexible work arrangements, low-cost travel, diverse outlets for personal creativity, low burdens of responsibility, etc. Unfortunately, a low-growth, inflation-ridden, and shortage-plagued economic environment with its troubling undercurrent of social/political stress creates conditions that are growing less hospitable to some of their self-fulfillment goals.

The third bind concerns their interpretive framework: Those most strongly absorbed in a self-fulfillment quest see the world and themselves through categories of thought borrowed from theories of self-psychology. They speak the tongue of "need" language; they are forever preoccupied with their inner psychological needs. They operate on the premise that emotional cravings are sacred objects and that it is a crime against nature to harbor an unfulfilled emotional need. This psychological attitude affects precisely those crisis points in their lives when their attention might more productively be turned outward.

Those caught in the triple-bind most often live in paradox. Exuberance is shot through with anxiety. Willfulness is coupled with crippling sense of powerlessness. Decisiveness is undercut by confusion. And the warmth of self-acceptance is muted by an odd feeling of estrangement from the world. They are not sure how to choose, and they are reluctant to risk freedom by making commitments that may prove irrevocable. They seek to preserve their freedom by failing to risk it. They do not see themselves as part of various social collectives, but rather isolated-essential-related intimately only to their own psyches.

Like many of you I am concerned about what is happening to the psychoculture of our profession. Are we willing to teach those matters and issues that will affect the survival and self-reliance of future generations? Do we have the courage? Are we willing to be a profession that is not anti-intellectual? Are we willing to protect the rights of future generations? Thank you.

---

[1] NICHOLAS ROBINSON "Global 2000 and then some," **Sierra Magazine,** (May/June): 48-49.

[2] JAMES W. BOTKIN, MAHOLI ELMANDJRA, and MINCEA MALITZA **No Limits To Learning: Bridging the Human Gap,** New York; Pergamon Press, 1979, pp xiii and 10.

[3] DANIEL YANKELOVICH **New Roles: Searching for Self-Fulfillment in a World Turned Upside Down,** N.Y., Random House, 1981.

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The Virgil/Sandman Letters

As collected and edited by
Dean Markwardt
Coordinator of Learning Resources
School District of Marshfield
Marshfield, Wisconsin

An explanatory note: Something needs to be said about the nature of these letters, their addressee, and their author. The author first — Virgil is, of course, Virgil Virgil, media director of Wippesaukee, Wisconsin. Longtime members of WEMA will certainly know Virgil personally as he has regularly attended one of the two annual WEMA conferences for the past 15 or 20 years. Further, I have previously relied on Virgil for both inspiration and material in three or four (three, I think) articles that have appeared in the WEMA Dispatch and the Journal. No, you won't find Virgil's name in the WEMA membership directory. As has been previously noted, Virgil's fiscal year is out of synch with WEMA's and so his dues are invariably received just after the directory has gone to press.

The addressee has reason to be both better and less known to you. Samuel "Satchel" Sandman flashed through Wisconsin's media skies in the last year and a half appearing on every conference agenda imaginable, serving on task forces and steering committees, and authoring innumerable position papers, white papers, and other weighty tracts. While here he held the position of Future Technology Coordinator (or something like it — I haven't been able to nail down the exact wording) in some sort of consortium between and among either the CESA's or the ECB on one hand and UW-Extension or the University System on the other. There may also have been some funding or good faith support from a state or regional organization of private elementary and secondary schools . . . or universities. I haven't quite been able to nail that down either. At any rate, the funding appears to have been abbreviated and Sam packed his bags and moved on to Seattle . . . or San Diego. it doesn't really matter since I understand he is no longer there anyway. Sam's whole professional career seems to be that of a transient, hence his nickname.

I find an ongoing correspondence between Virgil and Sam quite remarkable . . . rather an odd couple. I asked Virgil how it happened to happen. He said it was all a mistake, that he had received a form letter appeal from Sam and took it for a personal note and so he wrote a personal response. Sam thought he had a fish on the hook (Virgil's words) and wrote back. Virgil wanted the last word, of course, and so they were off and running.

Virgil's letters fell into my lap one day along with Sam when he (Sam) stopped by my office to "touch bases," which means he wanted me to do something to support or promote or develop one of his schemes. Sam had with him his gargantuan brief case which serves as his desk and filing cabinet. Before he left, he had unburdened himself of about twenty pounds of his files, saying that they were valuable materials that I could do something with. I never knew exactly what he expected me to do with them and I didn't pursue it for fear it would lead to uncounted hours of unilateral labor. Anyway, among the mess was a bundle of letters to Sam from Virgil, letters which I found very interesting and worth "doing something with." I asked Virgil if he had any objections to publishing them in the WEMA Journal. No, he said, as long as anything of a personal nature was deleted, which I have done. Could he provide me with Sam Sandman's letters, I asked. He couldn't. Virgil didn't bother saving them saying that Sam's prose was a bit tedious and filled with phrases like "techno-literate substratum." Considering that, I think it's just as well that Sam and his letters are unavailable.

Here, then, are Virgil Virgil's letters to Samuel "Satchel" Sandman.

Dear Mr. Sandman,

Thank for your letter. I'm surprised you know my name much less that you think the Wippesaukee media program is representative of quality programs in the State of Wisconsin. Myself, I've always thought it's a pretty modest program but we're proud of what we are able to do with our limited resources.

To answer your question, yes, we are using microcomputers and yes, I am involved in the development of computer education in our district. More correctly, I **am** the Wippesaukee computer education program. I decide what to buy, I write the curriculum, I teach the classes. All this plus all the stuff I've always done before. So I'm involved alright.

And, yes, I do very much favor the use of computers in education. But, I've got to be honest with you. When you say microcomputers are the most significant contribution that technology has made to education since the invention of erasable bond paper, then I've got to pull in the reins a little (that's the way we talk out here in Wippesaukee). First of all, I'm not that crazy about erasable bond, but I know what you're trying to say: computers are going to change (and improve) education like nothing else ever has.

Well, I disagree. Computers are going to make a difference, alright. And I would bet that more dollars are going to be spent on this particular technology than on any that has come before. But I don't believe it's going to make all that much real difference. Plus which I don't think it's going to have as much impact as another modern technology already has. That's television.

Don't misunderstand me, Mr. Sandman. I think the new computers are wonderful. I bought one for myself which is sitting on a card table in my living room alongside my two video tape recorders. It's great. But it's not the be all and end all for education. I think you just overstated the case a little, that's all.

Thanks for your note, though.

Respectfully,

Virgil Virgil

Dear Samuel,

Thanks for your quick and unexpected response to my letter. As you can see by my greeting, I've taken your advice, and you can certainly call me just Virgil, too. Most people around here call me **Mr.** Virgil, even pretty good friends. I think they're afraid to call me just Virgil for fear I might think they're being rude. Like someone saying, "Hey, Sandman." But they don't have to worry. I'm not that sensitive.

But to the point. Please, Samuel, I know the microprocessor is wonderful and will change our lives in many and unforeseen ways. I won't deny that. And the fact that technological advances in this field have been incredibly rapid goes without saying. But please don't quote me Christopher Evans' ridiculous Rolls-Royce analogy. His "if-only" comparison between cars and computers is inept and misleading — and gives Rolls-Royce a bum rap. If the auto industry had developed at the same rate as computers, he says, today a Rolls would cost $2.75 and do 3 million miles to the gallon.

Rather than comparing a 1946 Rolls-Royce to a 1982 Rolls, he should have been contrasting the first self-powered coal or woodburning monstrosity to a contemporary Honda Civic. The analogy would have been more valid, but still absurd: apples and oranges.

The time frame of computer change is amazing, of course. Computer technology has to be measured in something like half-lives these days. The computer freaks seem enthralled with that. "Ain't it wonderful how fast we're changin'," they're shouting. Well, that's our biggest problem, too, isn't it. How do you know what to buy when you know any decision you make today was obsolete last week?

Buying computers is mostly a matter of nerve. No matter what you do, you're going to be surrounded by a crowd telling you you're wrong and you know they're right (although no two of them will agree on what you should have done,) but you've got to do it anyway and be convincing and appear confident in the bargain. Tom Wolfe should do a sequel to **The Right Stuff** and concentrate on media directors instead of test pilots. (By the way, I'll bet a 1946 Rolls would be more useful today than a 1946 ENIAC).

Anyway . . . anyway . . . I'm not arguing with you. I'm just saying that computers are less of a big deal than you're making them out to be. And I'm saying TV is a better teaching tool than computers, that's all.

Yours,

Virgil

Dear Sam,

Aha! I wondered when you would question my TV assertion.

No, I'm not talking about the impact TV has had on culture and society because of its overwhelming pervasiveness — although I could. And I'm not talking about the effectiveness of classroom TV, whether through the auspices of the ECB, AIT, or others — although I could. And I'm not necessarily saying that kids will learn more things and retain them longer from TV.

What I said was that TV is a "better" teaching tool than computers. I use "better" in a very moralistic, human way. The learning experience is somehow on a higher plane, but more later. And when I say TV, I mean TV production. DON'T SCOFF AT ME, SAM! I'm serious!

Think about it, Sam. What is the computer learning experience like? If it's CAI, a student is encouraged to interact with a machine. OK, that's not all bad. Given the immediacy of response, the instant reinforcement, the student **involvement** in the material, that can be a really positive experience and really effective. But it ain't human, Sam. It's still just a machine and glowing letters. It's a moving away from human interaction. It's stepping aside and away from people. To me, that's bad.

Here's my basic premise: Leaving aside the higher values of religion, positive human interaction is the most vital skill we can possess. It's the most important product of education. It's the only thing that really matters. It's the key to our survival and to our happiness. That's my sermon. If you can't accept that, I'd like to know what your alternative is.

Now consider TV production. Making a TV program almost always has to be a humanizing experience. It demands human interaction — to understand the subject, to direct the talent, to coordinate the crew . . . and to be directed and to be coordinated. There is tremendous interdependency and involvement there . . . true involvement, the kind that has people in it. "People" is plural, you know. If we ain't got "people" in our educational process, we ain't got nothin'.

There it is Samuel. I've spoken a corner of my mind. People and people. People talking to people, understanding people, helping people, working with people, respecting people, liking people. Television production promotes people. Computers do not.

OK, the ball's in your court. Your serve,

Virg.

Dear Satch,

Thank you, thank you, thank you. You've given me the finest compliment I have ever received. You are the first person ever to call me a Secular Humanist. Although you meant it as a joke, I **do** take it as a compliment. Despite what the morons of the world may think, there are few qualities more to be treasured than a sincere and abiding compassion for our fellow man. That's what humanism is. The weird distortion labeled "Secular Humanism" is the product of a particularly devious and fertile imagination, I think. But better to be a Secular Humanist than no humanist at all.

To respond to your serious (I think) points:

1. "If TV productions are so great, why aren't TV production people all wonderful?" For the same reason there are corrupt politicians, shyster lawyers, and fallen priests. "We all strive but few jive." (A quote from the men's room wall of Wippesaukee High, circa 1950). All things being equal, a rotten TV producer would have been truly detestable if he had worked only with computers. A good computer programmer would have been angelic if he had been involved with TV production . . . maybe. I'm not sure I want to get into career choices here. I'm talking about the relative value of educational experiences involving modern electronic technology.

2. "Of what value are millions of amateur student TV productions?" No value. Some good products will come of student TV production, I'm sure, but not many. I'm talking about the process, not the product. Turnabout: How many valuable computer programs are students likely to produce? Again, not many, right? Right?

3. "The world doesn't need millions of people invading the field of broadcasting." You're right. Nor does it need millions of computer programmers. Again, I'm talking about an educational experience, not career training. We are both talking about understanding and awareness and some limited skill development. "Literacy," if you like. I think my literacy brings with it some more human values than your literacy, that's all. BUT . . . don't underestimate the number of careers that are going to be opening up in the TV world. With cable, with home VTR's, with more and more institutional, industrial, and business use of video, demand for the right people is rising and will continue to rise. I think computers and TV are both booming babies right now.

Well, Sam, I hate to say this, but my logic appears impregnable (if that's good . . . if fewer people were impregnable, we wouldn't be closing our schools). Anyhow, I won't blame you if you quietly drop the subject and silently acknowledge defeat in this particular debate. Others have gone before.

Yours,

Humble Virgil

Dear Mr. Sandman,

You must realize that you are not playing fair. To rebut with a question forces me to make your points. Alright, I will do it. But the game is mine. You must discontinue the debate. You have conceded.

You ask whether computer education has any virtues that are not shared or exceeded by those of TV production activities. Yes. The very thing that I criticize most about computer learning is also its single greatest virtue. It can be done alone. It can be a solitary experience. There is a place and a **need** for solitude. Computers and computer programs allow functional, productive aloneness. There is nothing about working or being alone that is bad. **Always** being alone is bad. Then it becomes introverted. Then it becomes dehumanizing. TV production is inherently a cooperative activity. Although many of its elements can be accomplished singly, the total package almost always must be a team effort.

A second advantage: compared to TV equipment, computers are cheap.

That's enough. That's not necessarily everything but those are the biggies.

You know something, Sam? I have a confession to make. I'm not sure I'm right. I don't really know if TV production is all that superior. Who can measure something like that? I know one thing: a lot more kids are working on computer programs than I ever saw work on TV programs. I don't know why, really. Is it so much easier to get started? Is it because no one worries what someone else will think of their program? (A computer program can start private and stay private. A TV program just **has** to be shown to somebody.) Is it because computer teachers are better than TV teachers? (There are more of them, that's for sure.) Is it because kids never had a chance to be intimidated by professional computer programs the way they have been by pro TV? (Of course, they've missed the inspiration as well.) I don't know. Computers sure have got **something** going for them. Maybe the sheer superiority of numbers of kids who are into computers counts for more than the quality of learning I have attributed to TV activities.

And then there's another thing. We've been talking computers and TV, as though there's nothing else. I've got a second confession: If push came to shove, I'd suggest we chuck both of them for good old reading and writing. That to me is still the basis of all learning. I don't think that's reactionary, I think that's realistic.

Well, I appreciate these exchanges, Sam. Thank you for your time and your thoughts. I'm sorry to hear you are leaving us soon. I had hoped to meet you and even thought you might get to see Wippesaukee before long. Visit me if you should ever pass this way again.

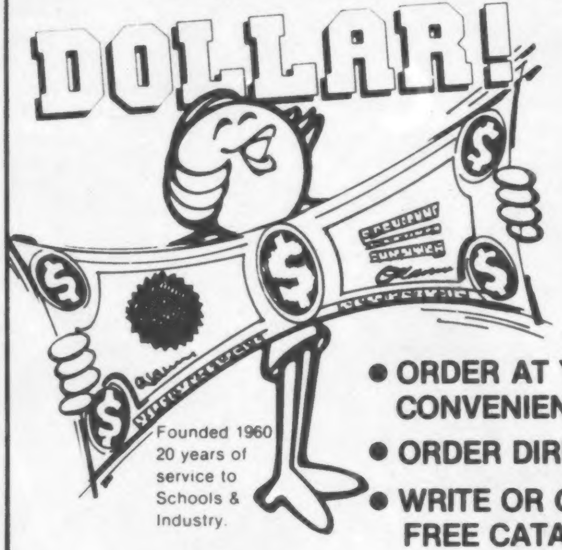
Most sincerely,

Virgil

That concludes the correspondence that Samuel "Satchel" Sandman left with me before he moved on. Virgil tells me he had a note from Sam before he left, but close examination revealed it to be a form letter that Sam apparently sent to all his acquaintances and contacts before leaving for Denver . . . or Spokane. Virgil hasn't heard from him since.

Virgil was a little surprised to reread his letters and discover how strongly he felt on the subject. He says he'll stand behind himself, though, at least until someone comes along who can put a better case than Sam. "A position is something you take, develop, and defend," says Virgil, "and then forget about until somebody digs it up and embarrasses you with it." I'll buy that.

STRETCH THE BUDGET



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Perspectives on a New Position at the DPI

by M. Elaine Anderson, Supervisor
Microcomputers & Instructional Technology
Bureau for Instructional Media & Technology
Division for Library Services
Wisconsin Department of Public Instruction
Madison, Wisconsin

In an age of rapidly expanding development and use of instructional technology, in particular computers, the Department of Public Instruction (DPI) recognized the need to bridge the gap in the resource services presently offered by the Bureau for Instructional Media and Technology. Thus a new position, that of Microcomputer and Instructional Technology Supervisor, was created. My responsibility includes providing leadership and consultation to schools, school districts, and CESAs in the area of instructional technology. It is important to note that the emphasis is on computer literacy curriculum development and implementation, and on the use of computer applications for instructional purposes in all disciplines. I'm available to help school districts (1) develop and implement district instructional computing plans, (2) work on computer literacy curriculums, (3) provide aid in the selection and evaluation of software and hardware, and (4) help plan for the use of the computer as an effective instructional and management tool in all disciplines.

I also work closely with other DPI subject and curriculum specialists to coordinate the efforts of all DPI personnel as their activities relate to technology. An important aspect of service is in providing appropriate staff development for DPI staff in computer education and other technologies, and to help with the planning and implementation of school district staff inservice programs. In this respect, I will be working closely with various agencies such as the University System and the Wisconsin Instructional Computing Consortium (WICC) to develop programs to best serve the needs of staff in Wisconsin's school districts.

One of the objectives of the position is to provide information to school administrators, teachers, media specialists and other staff members through newsletters, journal articles, conference presentations and the Educational Teleconference Network (ETN). Other objectives include keeping current with the field (an almost overwhelming task), and providing leadership as well as consultation in the trends and applications of all audiovisual equipment, software, use of media, security and inventory control.

At present, several distinct areas of application continue to characterize the computer education of K-12 students: (1) the use of the computer as an instructional tool, (2) computer literacy with an emphasis on the impact of computers in society, (3) the use of the computer as a problem-solving tool. The DPI will soon publish a set of "Wisconsin Guidelines for Computers in Education". These are designed to help districts put computer technology into perspective as it relates to curriculums in their particular situation. They will also provide step-by-step procedures to help in the development and implementation of a district plan for using computers.

Through such guidelines, as well as the previously mentioned activities of the new supervisor, the DPI continues its traditions of providing leadership to the educational community. Future developments in these areas will be announced in the DPI newsletter and other publications.

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Functions, Benefits and Justification

by Harry Zimmerman
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Madison, Wisconsin

Educational technology service center management based on cost-benefit technique may not provide more for less, but it could get more from what exists, it could help justify requests for needed educational technology equipment, and it could provide a basis for inservice activity. Cost-benefit management has not often been applied to the everyday operation of an educational technology service center. (Van Der Drift, 1980.) It should be. The nonprofit character of a school system might be the reason given for not doing so, but that alone wouldn't explain the absence of cost-benefit consideration. Some would say irrational sentiments were practiced by too many teachers using instructional materials. For example, add educational TV or film to a course and quality of instruction will just naturally improve. The abstraction of irrational use, they would claim, made it impossible to establish any cost-benefit relationship. That may be true. But, the complexity of applying cost-benefit technique is more than likely the overpowering reason why it has not applied in the day to day operation of educational technology service centers. A simplified cost-benefit technique has great promise as a way to justify and increase efficiency of the educational technology service center.

Numerous attempts have been made to justify educational technology devices by measuring their contributions to broad learning objectives. Such attempts constitute worthy research, but it is far too complex and time consuming to contribute to the day to day operation of an educational technology service center. Substantial information for the Director to subjectively evaluate the values of (educational technology) devices is needed. Obvious and observable benefits to students and school systems could be identified by observing the functions such devices perform in contributing to a learning environment.

Obvious and observable functions may be described in the following ways. Video-cassettes can deliver human material and/or graphic visual and auditory experiences to large groups of students. Video-cassettes can provide demonstrations over and over without tiring. Another observable function of video is its ability to actively involve students in the creation of video-tapes.

A function of computer hardware is its ability to create new models and provide experiences that would give learners an intuitive sense upon which to base abstract ideas. A well documented function of computers is their capacity to create tutorial teaching situations. They can function as a laboratory substitute. Other functions computers fulfill is creating an interactive learning environment, and they can function in a managerial role, etc. (Langton, et. al., 1980.)

An observable function of the videodisc could be described as providing a linkage between other educational technology creating interactive environments for learning. Similar functions can be described for all major educational technology devices. It seems reasonable, as a first step, in getting more for less to identify those functions that are relevant to your school situation, for the educational technology devices you have or want.

Capital costs of hardware are only one of many costs in providing services through an instructional technology service center, but they are becoming an increasingly significant one. With the advent of newer educational technology such as computers, television, satellite, multi-screen, videodisc and various interactive devices, an investment in educational technology hardware has indeed become a major concern and requires considerable study on the part of the Director in preparation for defending its acquisition and upkeep.

Capital equipment investments are some of the hardest types of investments to evaluate in advance of purchase for at least three reasons: (1) few salesmen bother to speak about the purchase as an investment; (2) value of equipment investment cannot be accurately known in advance; and (3) exact costs of a proposed investment cannot be precisely estimated in advance. (McLellan, 1980.)

In the profit making organization office administrators have to prove the value of capital equipment investments in advance of purchase. They use a technique that will determine the rate of return expected from capital equipment investment: marginal corporate income tax rate would be determined, life expectancy of the investment would be determined, and the inflation rate would be taken into account. (McLellan, 1980.) While this attention to detail may not be completely applicable to the nonprofit school setting, certain parts of it would be of value. The rate of return of an educational technology device is relevant when rate of return is defined as the projected estimation of potential reached in terms of its expected functions, while life expectancy might refer to the chances of its becoming obsolete too soon. For example: A Director might purchase a computer system for $100,000. Shortly after its terminals were in place, video terminals became available and could have been purchased for $75,000. This situation could have been averted through proper planning of which the capital outlay is a major part.

When capital investment is made, the currency used becomes lost with respect to other investments. Leasing may be a more desirable method for obtaining some types of educational technology. Initial cash outflow for leasing is usually quite low. However, continuing cash outflow would usually be higher than those for a purchased system, but it can vary significantly depending upon the specifics of a lease contract. In the nonprofit school setting, leasing can become less expensive than purchasing. (Weidler, 1976.)

Aside from economics, the most desirable method for obtaining certain high technology devices might be the short term lease. The computer is a good example of where the principle might apply because of the continuing and rapid advances being made in the industry. A lease can permit a high degree of flexibility, and the overall risk of being left short in the state of the art is reduced. Through leasing, available money for educational technology investments might be made to stretch further.

All things being equal one should choose the method of acquisition with the lowest cash outflow. One way or the other the Director must convince the school board that the educational technology service center deserves increased and continued support through capitalization, because of the returns the investments make to the overall quality of the school's instructional programs. And one way to do that is by approaching the situation from a cost-benefit viewpoint.

Some simple record keeping is necessary. The amount of time a particular device is being used would need to be recorded, as would the number of students participating in the learning activity. It would be necessary to identify these recordings with functions. Though some might want to gather additional information such as subject matter involved, grade level, uses outside of the classroom, etc., the main idea is to keep record keeping as simple as possible. A simple worksheet for each major capital investment device could be used to record this information. It might be similar to the one shown in Figure I, or you might design your own.

The left hand column of this sample worksheet lists the functions identified as the main reasons for needing a computer system. In other words, the justification for owning a computer is its capacity to sustain a tutorial function in the school, its ability to help students as they undertake individual research projects, because it can function as a substitute for otherwise unobtainable laboratory experience, and because it can function in a needed managerial role. Spaces on the sample worksheet to the right of the functions statements provide space for recording amount of time each function is performed in a learning situation, and the number of students involved.

This sample worksheet provides a space for recording the date the device was used and location of its use. Information similar to that described here could be recorded for an entire school year, or a reasonable part of the year. At regular intervals recorded information obtained from the worksheet could be totalled providing reliable summation of time spent on each function subscribed to the device involved and number of students involved. The information collected from the worksheet on amount of time and number of students compared with the capital cost of the device under consideration will provide basic information needed to do some cost-benefit analysis.

A student contact ratio can be obtained for devices under study and/or for each of their functions by multiplying the number of students reached by the amount of time that the device is contributing directly to the learning environment of these students. In turn, the cost of the device is divided by the student contact hours, giving a cost per contact hour for the equipment under study. Example: If the cost of a device is $5,000 and 121 students are involved in the learning environment created by it for 15 hours, the cost per contact hour would be figured as follows: (121 x 15 = 1, 815 and $5,000 ÷ 1,815 = $2.75). Two dollars and seventy-five cents is the cost per contact hour. Another way of quantifying the contributions made by the device is to compile the numbers for students and periods of time with the option of converting those numbers into percentages. These number/percentages are used as a basis for subjective evaluation of the worth of the device under consideration. Simply showing the number of students involved and the time used could be impressive, and would enable you to analyze the functions being performed by the devices for management purposes. The assumption is that if an important function of an educational technology device is not being utilized there must be need for inservice training in that aspect of its use, or it may not be needed and could be replaced by something of greater value to the instructional program. On the other hand, if there is strong evidence that the full potential as described through functions has been reached, then surely that would be evidence of the value of that investment and/or the need for more capital investment in that area.

Other information relevant to management can be obtained. Directors could chart subject areas where the devices are being used and even develop insight into the time of year they are most used, or least used. Such use of numbers won't tell the whole story nor completely take the place of good narrative descriptions and wise professional judgment, but they surely will give additional insight in support of some of the more traditional ways of justifying and managing capital investments in educational technology devices.

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Figure I

FUNCTIONS WORKSHEET

Date________________

Functions	Time in Use	Number of Students
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Tutorial		
Research		
Lab. sub.		
Managerial		

Location____________________________

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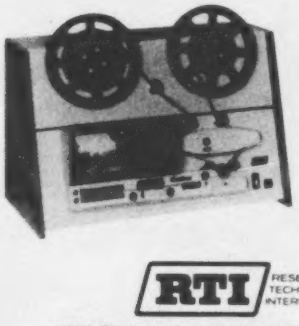

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WBSD-FM: Student Operated Radio

by Terry A. Havel
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Burlington, Wisconsin

This past April, WBSD-FM celebrated its eighth anniversary as a student operated radio station. The station, licensed to the Burlington Area School District, is totally operated by students attending the district's high school (enrollment just under 1200). A student operated FM radio station is a rather rare breed in Wisconsin. Other than Burlington, only four other high schools have radio stations in the Badger State: Sheboygan North and South, Green Bay Premontre, D.C. Everest in Schofield, and Washburn. The Milwaukee school district also operates an FM station, but it is not student run. Several other high schools and junior high schools do have closed-circuit stations which cannot be heard outside their respective school buildings.

WBSD-FM operates with two hundred and sixteen watts of power and can be heard as far away as thirty to thirty-five miles, although the normal range of signal is about twenty miles. The station is fully licensed by the Federal Communications Commission in Washington, D.C. and is on-the-air eighty hours during a normal school week. Broadcast hours are Monday through Friday from 6:15 a.m. until 10:30 p.m. During the summer, the station operates on a daytime schedule only, 7:00 a.m. until 3:30 p.m. Sixty students comprise the WBSD-FM staff, working in various positions that will be explained later.

Presently, the high school offers two separate semester courses, Broadcasting I and II, with the radio station serving as a laboratory for students enrolled in these courses. The first semester course introduces students to both radio and television broadcasting including their history, regulation, theory, operating equipment and practices. The second semester course is a radio production course in which students are involved with projects such as writing and delivering commercials, disc jockey programs, program production and interviewing. Students may also work at the station without enrolling in these courses although the majority of student workers have either taken a course or plan to do so. Currently there are five sections of Broadcasting I and II being offered.

One might wonder why a school district would want to get involved with the operation of a radio station; therefore, it might be helpful to trace the evolution of WBSD-FM as a station. The station started as a closed-circuit facility serving students with piped-in music during the school day from 1972 through 1974. At that time, this writer suggested to the school administration that the nucleus of an actual on-the-air FM operation was already in place and needed only the purchase of some additional transmitting equipment to go on-the-air. A proposal was made to the school board in the Spring of 1973 and after several meetings the board voted unanimously to file for a construction permit to build the station. Permission was received from the FCC early in 1975 and the station "signed on" in April of that year. Starting with just two rooms (an on-the-air control room/studio and an office) the station has expanded to include a production facility and a newsroom. At present, WBSD-FM is as fully equipped as many small to medium sized market stations in our part of the Midwest. Initial funding to put the station on-the-air totaled $5,000 and the school district has continued to budget operations money each year since then. The 1983-84 budget for the station is $6,400.

Our radio station supports the school district's educational program in these ways and each will be expanded upon in the paragraphs that follow:

1. The station provides a "hands on" practical approach to language arts skills such as reading, writing and speaking.
2. The station provides the students with an opportunity to assume major responsibilities in the operation of the station.
3. The station helps to shape student confidence in their own skills and abilities, especially through interaction with others.
4. The station serves as a training laboratory for students who are interested in pursuing a career in broadcasting or some other aspect of communications.
5. The station serves as a public relations avenue for the school district.

Language Arts Skills Experience

WBSD-FM is programmed somewhat similarly to commercial radio except that it cannot air actual commercials. Students serve as air personalities, news and sportscasters, producers and engineers of programs. Some students are also required to do interview segments which combine all of the already mentioned skills into one exercise. In this way, all of the language arts skills come into play in the daily operation of the radio station. Students must be able to read copy, speak extemporaneously or from written scripts and, in some cases, write scripts or write copy for themselves or other staff members. Not only does each student have an opportunity to evaluate his or her own efforts, but so can anyone who happens to be listening to our station at any given time. Critical listener feedback is one of our educational program's strongest assets.

Student Responsibilities

At any time the station is on-the-air, one student is responsible for its actual transmitter operation. Such students must certify that the station is operating correctly within the Federal Communication Commission (FCC) guidelines. In order to do so, students must be knowledgeable about FCC broadcasting rules and regulations and must pass a fifty question examination. At the present time, we have forty students who assume this responsibility sometime in the course of our broadcasting week. In addition, other students must take responsibility for making sure that taped programs are in the control room ready to be aired. Others prepare the daily program log which is necessary for keeping track of what is to be aired at what time. Students also prepare and deliver the news and sportscasts at specified times in the broadcast day. Still others students are responsible for selecting which current albums or single records will be featured each day on the station programming. There are few school activities which require as much commitment from students every day for thirty-six weeks or more each year.

Student Self Confidence

The station also helps to shape student self confidence. The knowledge that many listeners will be judging their capabilities motivates many students to put forth their best effort at all times. Radio also tends to attract many students who do not always find other kinds of school activities to be of interest. We believe that our program has helped to retain some students who would have otherwise dropped out of school due to a lack of interest in other subject areas or school activities. Since we require that students must be academically eligible to work at the station, many of our students actually raise their academic averages. We also attract many students who consistently place on the honor roll every quarter.

Training Laboratory

The daytime radio program format at Burlington during the past school year consisted of adult contemporary music (Barry Manilow, Neil Diamond, Barbara Streisand, Lionel Ritchie, etc.), currently the most popular commercial radio programming format. Short talk features of interest to adult listeners were also aired. Such talk features, never more than five minutes in length, often are produced by our own students. The music featured is mostly pre-programmed, and established commercial radio station selection procedures are followed. Student disc jockey programs simulate commercial radio formats with public service announcements used in place of the more customary commercial announcements.

The evening programming format at WBSD-FM offers our radio audience an alternative experience to what is normally programmed in commercial radio markets. Billed as "Southeastern Wisconsin's New Music Alternative", new wave, punk and reggae music are featured from 2:30 until 10:30 p.m. An hour of jazz music is also featured during this time period as well. By choosing to concentrate on musical formats which are not commercially available for the most part in our broadcasting area, the majority of our staff and listeners are thus exposed to new musical forms and styles while our station's student executive staff is learning radio marketing strategies first hand.

Students from our station who elect to major in mass communications or broadcasting after high school are generally two to three years ahead of their peers who have had no previous high school broadcasting experience. Twenty of our radio station alumni have worked or are working in the field of radio either full or part time. Presently, WBSD-FM graduates are working at radio stations in Milwaukee, Racine, Madison and Stevens Point. It is this vocation training aspect of our ratio station program which has helped the program to gain acceptance with our tax paying community.

Public Relations

WBSD-FM also provides the Burlington School District with a very valuable public relations vehicle. During the past eight years, all varsity football, boys' basketball and home baseball games have been aired on the station. Selected varsity girls' basketball games as well as several football and basketball games of the Catholic high school in our community are also broadcast. Our facilities are also made available to our local Catholic high school as well as to a nearby high school at Waterford for purposes of broadcasting their own programming. In addition to the district superintendent's weekly report to the community, a fifteen minute program called "Community Focus", which centers on issues of importance to Burlington area community, is also aired each week. The station also does many community promotions. As part of our public relations policy at the station, we will provide free air-time publicity for most non-profit organizations or projects in our community. During our eight years of broadcasting, our community service programming has been viewed positively by most of our listeners.

Our radio station experiences at Burlington High School have been both positive and rewarding. The station offers a large variety of educational experiences to our students at a minimal dollar cost to our district. The district considers the operation of the radio station as one of its strongest educational programs. Evidence of this is provided by current considerations for the addition of a television curriculum to the broadcasting program already being offered.

Although start up costs have risen over the past eight years, most districts can probably put a station on-the-air for under eight thousand dollars. This figure could be reduced somewhat by using audio equipment already existing in a district's audiovisual department. Expenses to the district can probably be further reduced through a variety of fund raising activities. Since it is beyond the scope of this article to explain the steps involved in putting a station on-the-air, the author of this article will be willing to consult with interest district personnel wishing to set up their own on-the-air station. Helpful publications such as **A GUIDE BOOK TO HIGH SCHOOL RADIO** by Chuck Brown are also available.

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Imaginative Gifted and Talented Programs: It's All in the Approach

by Ann Canarie
Librarian
John Audubon Middle/Junior High School
Milwaukee, WI

One of the most exciting activities it was my privilege to experience was my involvement in a federally funded program at the Golda Meier Elementary School for the Gifted and Talented (a Milwaukee Public School). Undoubtedly, my greatest achievement in those two years was initiating outreach programs. With the current increased emphasis on ethnicity, civic pride and learning library skills, brainstorming several ideas which were experimental proved to be valuable library lessons. Because my approach was somewhat unconventional, it demanded a great deal of work, preparation and stamina! A detailed description of one of these ideas follows.

All classes in the school (grades 3 to 5) came to the library at a regularly scheduled time every week. Since the third graders were involved in classroom activities dealing with the community, I gathered all the material I could find from City Hall, from the Chamber of Commerce, from the **Milwaukee Journal** and set up my lesson plans. Each third grade class was divided into three groups and each group was given one of these topics: Flag Design, How to Make Milwaukee a Better Place in Which to Live, and Milwaukee Through a Child's Point of View.

Topic 1: Design a New Flag for the City of Milwaukee. For this subject we borrowed a flag from City Hall which was displayed on the bulletin board (a whole wall!), along with flyers, pictures, pamphlets, filmstrips, and whatever else I could find that concerned the city of Milwaukee. I managed to procure enough pamphlets from the Chamber of Commerce so that each student had his own. The students were required to use as many reference and supplemental sources as possible, (encyclopedias, books, pamphlets, realia, etc.). Although they soon learned how difficult it is to design a flag, they also learned CONCEPT, and SYMBOLISM, and CIVIC PRIDE!

Topic 2: How to Make Milwaukee a Better Place in Which to Live. For this theme we visited the "morgue" at the **Milwaukee Journal** to find out about some of the problems in our community. After sending our eager "reporters" out to interview people of all ages, then discussing the problems in our group, we selected several of the most pressing. We then wrote a letter to our Mayor explaining our project and offering suggestions, and soon received a reply inviting us to meet with him at City Hall.

Topic 3: Milwaukee Through a Child's Point of View. Many visitors come to Milwaukee and though there are many things for adults to see and do, what is there for children of visiting businessmen, relatives, vacationers? After much lively discussion, we made a long list of places for these children to visit. Every suggestion had to be researched, considered, rated. Ultimately, these happy youngsters, with cameras in hand, went out to photograph the places they had selected so that a slide show could be assembled. One of the foremost considerations was to remember that the slide show must be suitable for year-round visitors, not just for summer visitors. Among the choices selected were an ice-skating rink at a shopping center, a fabulous toy store, the zoo, an old theatre, and the lakefront. It was a revelation to enjoy Milwaukee through a child's eyes.

Since there were three classes of third graders working with the librarian, those with the same topic from each class met together several times to share ideas and to consider alternatives. Book work, discussion, field trips, cognitive skills, writing skills . . . yes, this was an all-encompassing library project!

Several of these outreach units were to involve our youngsters with members of the community as the students explored their city's resources and used the library reference materials extensively. These were projects revolving around the ethnic character of Milwaukee. Newspaper and television coverage of current events provided the impetus for this project. The 1980 earthquake in Italy gave us an opportunity to use our library facilities to learn about Italy and Italians. Why not collect items and donate the proceeds to the Italian Earthquake Relief Fund? An Italian Giving Tree, a bare branch set in plaster of Paris, had many words in Italian and a piece of candy for anyone who donated something. We were proud to donate clothes and money to Milwaukee's Italian Community Center. Resource people (grandparents, Italian-born Americans, university speakers) were brought in to speak to us. Each student learned about the foods native to Italy and the customs and culture of that country. The main office displayed Italian art and products ranging from Michelangelo's "David" to soft leather gloves, purses, dolls, books, jewelry. Every available display area in the library featured something Italian.

Poland was also in the news! Milwaukee has a large, proud Polish community! Let's learn about Poland! The POLANKI women gave generously. We were offered display materials, lectures, food and dancers. Our students planned a luncheon and, with the help of our home economics teachers, prepared the luncheon, the first of many others to come. Several lucky students learned WYNCINANKI, the art of paper cutting Polish style, first-hand, when an artist came to our school to demonstrate the skill.

Germany! Why are there two Germanys? We learned why and we learned so much more, because, again, we had the German community in Milwaukee to help us. The extended library was at work again researching our German community's culture and language. We discovered the Goethe House, the German restaurants, and the new "Little Bird" dance that was so popular in Germany. We enjoyed a delicious luncheon prepared by our students. And to top it all off, a selected group learned about stained glass and stained glass art with artist, Paul Yanko. Since librarians work with teachers also, our art teacher became interested in the lessons, and, as a result, our library now has a stained glass window.

A unit on Jewish people and their culture developed an understanding of the customs, the food and the culture of the Jewish people. The luncheon for this unit was donated by an area Jewish restaurant! During Black History month, we invited speakers, did research, learned about famous Blacks, read books and gave book talks. A contest listed famous Blacks and asked students to identify their sport or profession: Lena Horne, Niddi Giovanni, Gale Sayers, Jesse Owens. What did acronyms such as SCLC, PUSH, NAACP mean?

In addition to all these activities the library ran many other contests which were successfully used as a means of drawing students to use the library. Third graders were most enthusiastic about contests! How these encyclopedia indexes were used! And **Famous First Facts!** And quotation books! Using simple library skills and some good clues, another contest honored women. The students were off and running answering questions such as, who was the first

American woman golfer?, who is known as "The Lady of the Court"?, who was the founder of the Girl Scouts?. Special day celebrations such as Columbus Day proved to be an excellent source for contest ideas.

Columbus Day also provided an opportunity to salute America. We assembled a bulletin board display of sixteen pictures of symbols, documents, famous monuments or buildings. The culminating "Salute to America" program, which I initiated, organized and coordinated, was given in the school auditorium and included original skits, dramatic readings, patriotic songs; it was a wonderful LIBRARY OUTREACH PROGRAM.

Working with children in a gifted and talented program was a challenge; every hour was filled with teaching, leading, working. These were highly motivated students, cooperative teachers, staff, and administration. Yet this can be accomplished anywhere in any school situation. Ours happened to be an elementary school, but my experience has also included serving in a large comprehensive senior high school and in a middle school. Because of the larger student body in those schools, such projects as explained above must be altered, but they can be part of the school library program for this higher level. Some of the following activities can be initiated. In the high school, the school library can run a NOSTALGIA DAY. Have students bring in old records, old clothes, picture albums. Display them and you have living history. Another idea can be TALENT DAY with teachers and students in the library performing, let it be music, or poetry reading, or play-acting. Plan a READ TO A CHILD WEEK for Children's Book Week and have some of those wonderfully illustrated children's books in the high school library for all to enjoy. Isn't there a certain feeling of belonging when you share an old favorite from childhood days? On MAGAZINE DAY, have students bring in magazines found around the home and be pleasantly surprised to learn how many different types there are. There is reading material all around us if we look for it or notice it. Display the magazines, giving credit to the student, teacher, whoever brought the magazine into the library. As far as contests are concerned, poster contests, bookmark contests, all kinds of contests can put your school library in the news.

In a middle school situation to work with small groups on different projects makes life interesting and your job exciting. Plan to run the Open House program or the fund drives. Contribute to the school newspaper. Help students locate interesting information. Introduce new magazines, newspapers, books. Use the **New York Times,** Sunday edition, as a stepping stone to a lesson in what constitutes a newspaper. It's all there, waiting for you to utilize your creative and motivational skills.

In spite of the lack of time and staff, making an effort to be creative and challenging will demonstrate forcibly that a librarian is indeed an important cog in that school machinery, someone willing, able, and **eager** to work with students. From my two years of total fulfillment, I learned much as well as did the youngsters. I learned, for example, that even the very bright and very talented need time to be children, to revel in the joy of a sunny day or the fun of a heavy snowfall. I learned that children love to have that stern librarian come down to shoot baskets and play softball. I learned how deeply satisfying a hug can be when National Library Week was celebrated with "Hug Your Librarian" as a theme. If we become bogged down with exciting, challenging programs perhaps our secretaries, aides and volunteers will catch our enthusiasm and become willing to take on the clerical duties for us. Programs of this kind will bring students and teachers increasingly to realize that the media center is a vital and necessary learning center, a place where they can discover, absorb, and handle useful knowledge in a stimulating atmosphere.

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Interactive Media Systems

by John A. Grozik
Director
Instructional Media Center
Marquette University
Milwaukee, WI

For the past fifteen years I have been searching for ways to make the process of learning (and teaching) more effective. Much of my activity has revolved around trying to recreate the best of all instructional worlds in an environment that becomes increasingly complex. How do we confront the challenges presented by today's students? How can yellowed notes, thick books and out-of-date lectures compete for the mental energies of students who often get more satisfaction out of memorizing the latest Pac Man patterns than learning subjects which will help them compete in tightening job markets? Many of us turn to books, slides, filmstrips, films and other media. We need to be able to use a variety of available classroom tools to help us become more effective teachers. Programmed learning, instructional television and micro-computers are all valuable tools for classroom teachers. Nevertheless, employing programmed learning techniques with a class of independent students has often been a difficult management problem at best. Producing a series of instructional television programs has been difficult and expensive. Commercially available computer programs are often poorly designed and hard to edit. Separately, these tools have been unable to meet the challenge of today's students. Tied together, however, they form a new classroom force I call interactive media (IM).

Interactive media are basically any media presented to students under computer control. Thus any medium which can be connected to a micro-computer would qualify under this definition. The components range from computer controlled audio cassettes to computer controlled laser video disks. Interactive media, when properly designed, can provide many of the elements which might be found in the best instructional system or environment:

1. Instant response to each student as information is being presented.
2. The ability to illustrate a subject with text, graphics, sound, motion, and full color.
3. Infinite patience to work with a student at the student's level of comprehension.
4. The capacity to help the slower student without inadvertently holding back the advanced or gifted individual.
5. The capability for keeping information current.
6. Recording, analyzing and summarizing student responses for course evaluation and revision.
7. Promoting school or district-wide levels of achievement for all students.
8. Automatically adjusting course content to the student's abilities and referring those with special problems to remedial coursework.
9. The capability to customize course materials or author instructional units which speak specifically to the students' needs.

Most presentation systems need several components to be truly interactive: micro-computer/monitor, video source, interface, viewer control and authoring language. The computer can be external or internal. Current technology places interactive computers only in video disc players. Video tape players require an outboard computer to find tape segments and to select the desired audio and/or video to be presented to the viewer.

The video source can be one of several available to the producer. IM systems are usually based on Beta or VHS video equipment. Three-quarter inch videocassette systems are not used as often, but interface cards are offered by some manufacturers. Video discs are becoming more popular as production costs continue to decline. Video discs offer the best combination of video and audio quality and motion control. Optical video disc units can precisely access and hold still frames for long periods of time without damage to the video source. Random access slide projectors, although not common, could present effective IM programs. Several systems can control different video sources at the same time. Dual tape, dual disc and tape/disc systems are now possible.

The computer/video interface is usually an accessory card which plugs into the computer to provide control over the video source. Apple and IBM computers, for example, have peripheral slots for such interface cards. Problems of compatibility arise since most systems require different cables and program control codes. Because most computers are capable of generating an RS232c signal with minimal additional equipment, one trend is to offer an interface box which allows such computers to communicate with a variety of video sources. Therefore any computer program which could generate a RS232c signal would be capable of driving one or more video sources.

Viewer control, the human element in IM, is extremely important. The best control allows the viewer to select answers or interact with the video source and computer in the most natural way. Most systems use the computer keyboard for user input. Touch sensitive television screens, light pens, joysticks, the mouse, voice control and graphic tablets are other less common but useful ways of providing viewer control. Touching the answer is the most direct response. Touch sensitive television screens minimize problems associated with a lack of typing skills or language deficiencies.

The authoring language is used by the computer to control the video source, provide branching capabilities and judge and track viewer responses. Each computer company produces an authoring language which is not compatible with programs produced by other companies. The market has not sorted itself out into one or two systems which can be used by a variety of interface cards. Presently, no two companies have software which is compatible. Some of the interface cards may be used by more than one authoring language, but no published studies have evaluated the many combinations now possible.

I have described some of the benefits of using interactive media and the components which are necessary to produce interactive programming. Large companies such as American Bell have found that interactive video is more effective and more efficient than traditional classroom instruction. Since IM is relatively new, few professionally produced programs exist for the classroom teacher. Resource video discs are now being published which, coupled with computers, will give instant access to important information for students. It will take teachers with an excellent command of the subject matter to produce useful interactive media.

One final element is crucial to the learning process. Although it is true that interactive media can respond quickly to students, the response is cold in contrast to a warm smile, an understanding nod or a hug from a teacher. It is this human element which technology will never replace. Because IM will enable teachers to become more efficient and productive, however, they will be able to devote more time to keeping the human element in education.

Recommended reading: Steve and Beth Floyd, Handbook of Interactive Video, (New York: Knowledge Industry Publications, Inc., 1982).

Interlibrary Cooperation: A Case History

by Roger Krenz
Media Director
Platteville Public Schools
Platteville, WI

Between 1980 and 1983 the Platteville School System IMC engaged in several endeavors aimed toward solving a problem that has certainly faced other systems. This is the problem of achieving bibliographic control of a school system's collections without the expenditure of professional time and effort that should be directed toward other professional tasks. Fortunately, technological advances have now made this possible for some of us.

As a result of the interlibrary cooperation activities this article will describe, the Platteville IMC staff was able to reduce the time that was normally assigned to cataloging tasks. One of these ventures covers our experience with the University of Wisconsin-Platteville (UW-P) and the Ohio College Library Center (OCLC) during the period May, 1980, to June, 1983. The other describes our plans for working cooperatively with the SouthWest Wisconsin Library System (SWLS) beginning in July, 1983.

The Platteville Public School System consists of three elementary schools, one middle school and one high school. Before 1980, only the media collections at one of the elementary schools and the middle school were completely cataloged. The other two elementary collections and the high school's audio visual collection were only partially cataloged. The elementary schools were just beginning to attain centralized collections. However, the high school's media collection with its partially cataloged extensive audio visual collection was the major concern which prompted searching for the most expedient and economical means for achieving a totally cataloged media collection.

This was the situation when the North Central States school evaluation team visited the Platteville system and recommended that the entire media collection at the high school be cataloged. The Department of Public Instruction visiting staff made the same recommendation.

Faced with the decision to move in this direction, we began to research the most economically feasible method for accomplishing this goal. After some discussion with professional colleagues, we identified the following options: (1) To accomplish original cataloging of the entire audio visual collections with a clerk typing cards. (2) To attempt to buy cards directly from the vendors who supplied them along with materials. (3) To use an existing computer cataloging system. Option number three seemed the most attractive since our neighboring University of Wisconsin-Platteville (UW-P) had already been using the Ohio College Library Center's (OCLC) services as do the several schools in the University of Wisconsin system.

We decided to discuss, with the UW-P administration, the possibility of accessing the Karrmann Library's computer for on-line cataloging using the OCLC records. Responding favorably, they, in turn, approached the Wisconsin Library Consortium office in Madison for approval. In their proposal, entitled **Proposal to Input Platteville Public Schools' Audio Visual Material on OCLC Via University of Wisconsin-Platteville Terminal,** May 14, 1980, the University of Wisconsin-Platteville and the Platteville Public Schools jointly proposed to OCLC, that the Platteville Public Schools begin cataloging all of their audiovisual material — both the existing collection of approximately 1,400 cataloged items and their newly received items, estimated at 300 items per year — on OCLC using the University of Wisconsin-Platteville's terminals and profile.

In accordance with the proposal, Platteville Public Schools agreed to maintain Level I cataloging input standards and comply with the standards for producing and updating records in the data base. One professional and a clerk from the school district participated in a short training program at University of Wisconsin-Platteville and South-West Wisconsin Library System (SWLS) at Fennimore, Wisconsin to learn tagging methods, searching techniques, inputting and producing procedures. A schedule for using the terminal was established so that Platteville Public Schools had access to one terminal on Fridays for inputting and producing while searching was generally done in the evening hours.

The terminal was located in the technical services area of the Karrmann Library, UW-P, since the school district could neither support nor justify its own terminal once all the back log of media had been cataloged. With the terminal located at the university, it was necessary to transport the items to be cataloged for searching and editing or for original cataloging. Occasionally this disturbed the teachers; however, the benefits accrued far outweighed the inconvenience. Besides the obvious monetary advantages of using UW-P's terminal, the school district cataloger and clerk were able to call upon the expertise of the host library's professional and technical services staff. Additional gains that the Platteville School System made through this OCLC access at UW-P were the following: (1) the majority of the items had already been cataloged by other libraries; it was a matter of retrieval of information and editing to suit our particular situation, (2) after inputting and initiating catalog cards, there was only a one week wait for printed cards, (3) the cards arrived separated by shelf list, dictionary catalog, and union lists in filing order, (4) there was no need to type cards, sort and alphabetize, (5) the level of cataloging was in accordance with AACR II standards.

An important part of any venture undertaken by a school system is the cost of the project. In the first year of the UW-P Karrmann Library-Platteville Schools joint OCLC use, there were not only start up costs for effecting of compatibility in cataloging format and for the training of school personnel in computer procedures, but there were variable costs to be considered. These included first time use cost, (this is the first time sets of cards are ordered) and the charge for card production. Cataloging accomplished by Platteville was not charged. The UW-P assumed all the usual annual OCLC fixed costs: e.g. terminal maintenance, monthly system service fee, printer paper and ribbon, telecommunication fee and the data set charge. The costs in outline form were these:

I.	Start Up Cost		
	A. Profile Changes	$100.00	
	B. Computer/tagging training	125.00	
			225.00
II.	Variable Costs		
	A. First Time use (1,177 Titles x 1.40)	1647.80	
	B. Original items (402)	n.c.	
	C. National Union Catalog items (526)	n.c.	
	D. Card Production (27,239 x .042)	1144.03	
	Total Costs		3016.83

The outcome of this effort was a proud accomplishment—the Platteville Public School District was one of the first school districts in Wisconsin to use OCLC for on-line cataloging. This was due in large measure to the support and total commitment of the school district administration as well as the generous cooperation of the UW-P administration.

At the end of the third year of our cooperative agreement with UW-P our school district was forced to face another challenge. Since the Department of Public Instruction was recommending that a district should have a media processing center to accommodate its various libraries, it was necessary that Platteville employ additional clerical staff if a full media processing center was to be an accomplished fact. This was an additional cost that the administration could not meet. Other avenues had to be explored, and so begin our second cooperative venture.

The Southwest Wisconsin Library System (SWLS) had been providing, among other services, acquisition and cataloging services to libraries within their system. When the Platteville School District approached SWLS with the proposal to contract for acquisition and cataloging services, SWLS was receptive and Ruth Roby, their cataloger, prepared a unit cost study. For full acquisition, cataloging and processing the estimated costs were: (a) $4.36 for print items, (b) $4.86 for audio-visual items, (c) $1.15 for paperbacks (no cataloging, but re-enforced with tape and pocket pasted in). At first glance these prices may seem high, but with the national average at between $8.00 and $10.00 per item for acquisition and cataloging and processing these prices become very affordable. Costs for the 1983-84 school year are estimated to be $7,479.50, as shown below:

1500 print items	x	$4.36	=	$6,540.00
500 paperbacks	x	1.15	=	575.00
75 AV items	x	4.86	=	364.50
	x	Total	=	7,479.50

(Continued on page 33)

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Continuing Education Clearinghouse

by Richard Sorenson
Library Specialist
Bureau for Instructional Media and Technology
Wisconsin Department of Public Instruction

A recent change in Wisconsin teacher licensing regulations ended the practice of issuing life licenses for teachers and library media professionals. Included in the new regulations is the requirement that six academic credits or the equivalent must be earned every five years for license renewal.*

This change has brought about increased interest in having information on continuing education readily available. Of course, professionally minded teachers, librarians, and audiovisual personnel have long felt the need for this type of information in the interest of increasing their knowledge, upgrading their skill, and keeping them up-to-date on technological developments.

In January of 1981, prior to the change in regulations, this need was addressed by a formal grant proposal. At that time a group of persons interested in continuing education from a number of perspectives applied for a Library Services and Construction Act (LSCA) grant to fund development of a "Clearinghouse of Continuing Education Information." The project would have employed a part-time coordinator and part-time clerical help and would have funded a microcomputer with peripherals, space rental, and printing and mailing of 3,000 booklets, 150 pages each, twice each year. The project was not funded, possibly because of its substantial cost ($100,000 over two years) and because of heavy competition for the limited LSCA funds.

Following the passage of the new licensing renewal requirements, educators have felt a greater need for continuing education information. During the summer of 1982, the Professional Development Committee of the Wisconsin School Library Media Association drafted a resolution, endorsed by the Wisconsin Library Association (WLA), and sent it to State Superintendent Herbert Grover, urging the Department of Public Instruction to provide such a clearinghouse. This clearinghouse would make available information about continuing education offerings relative to any teacher or librarian certification. These would be collected, categorized, and disseminated to all teachers. The Superintendent responded that a pilot project using microcomputers to develop such a clearinghouse on a limited basis was being considered. This project was part of the Department of Public Instruction's study of automation needs for education in Wisconsin. The Superintendent indicated that the project would collect information about the courses and workshops that dealt specifically with applications of microcomputers in education. It would also provide reliable estimates of costs, time, equipment, and staff needed for the comprehensive clearinghouse and would pave the way ultimately for a larger scale project.

When fully developed, the clearinghouse will contain information on the location, dates, credits, and pertinent information for all educational offerings of interest to teachers, librarians, and audiovisual specialists, whether pre-service or inservice, credit or non-credit, university or school district sponsored. The information will be provided in printed form or on microcomputer diskettes on a regular basis. Telephone links will also permit on-line searching of the clearinghouse. School media specialists will have a special interest in this project not only because of their own continuing education needs, but also because of their role as information specialists for the rest of the professional staff of a school.

Persons interested in the continuing development of this project may contact Darlene Weingand, University of Wisconsin-Extension, Communication Programs, 610 Langdon Street, Madison, WI 53706, (608) 263-2942 or Richard Sorenson, Wisconsin Department of Public instruction, P.O. Box 7841, Madison, 53707, (608) 266-1924.

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The Wisconsin Library Media Skills Guide K-12, 1979.
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Implementing Freeze-Frame Teleconferencing in Wisconsin

by Marcia A. Baird
Associate Director
Instructional Communications Systems
University of Wisconsin-Extension

In Wisconsin, teleconferencing is viewed as an important way for individuals or groups at several locations to communicate with each other. For 18 years, the interactive audio and audiographic networks operated by University of Wisconsin-Extension have linked rural and urban areas, fulfilling the Wisconsin Idea by making the University System's resources available to adults throughout the state. UW-Extension has also coordinated the technical design and operation of several other specialized teleconferencing networks serving high school students and state agency personnel. Each year more than 40,000 residents participate in teleconferencing instructional programs, training sessions or meetings.

In 1982, UW-Extension added freeze-frame video technology to its complement of delivery resources. Now, in addition to two-way audio communication, one of the networks allows an instructor or meeting leader to transmit pictures of participants, documents, slides, figures and objects to 26 statewide campus and courthouse sites. This form of video communication has been an important component of continuing education and credit programs in such areas as engineering, small business, environmental resources, history and music.

The Decision For Freeze-Frame

Up until Fall 1982, the Statewide Extension Education Network (SEEN) had interconnected 23 statewide classrooms, combining a two-way dedicated audio system and one-way audiographics system. One dedicated voice grade telephone line was used for audio, another for visuals. Since 1969 instructors had used an electrowriter to transmit hand-drawn graphics. These charts, diagrams, formulae and text, were transmitted over the network and projected onto a screen in each classroom. Tabletop microphones allowed for easy interaction between learners and instructors.

It became increasingly evident, however, that the electrowriter equipment was becoming obsolete. In 1980 we began a serious search for another visual system. Included was an extensive survey of commercially available products that could transmit visual information over telephone lines — electromechanical pens, the electronic blackboard, light pen video writers, graphics tablets, facsimile and freeze-frame video.

We also queried SEEN users and non-users. What kinds of visuals were needed to support SEEN classes? Did faculty need a graphics tablet, a keyboard for alphanumerics, still picture capability? What kind of flexibility did they want in the equipment — instructor-controlled operation, or technician-controlled?

A telephone survey and informal discussions revealed that both instructors and participants wanted a more versatile visual system. In addition to sending hand-drawn graphics, instructors wanted to illustrate statewide programs with slides, drawings and diagrams from textbooks and magazines, photographs, written material and three-dimensional models.

Ideally, some wanted a statewide full-motion video system. Those start-up and monthly operating costs, however, were prohibitive. With our SEEN network already in place, freeze-frame offered an economical statewide video system. Slide, graphic and other visual presentations could be made across the state or across the country. Finally, the system could easily be upgraded to improve performance.

At this same time Instructional Communications Systems (ICS) staff also gained valuable hands-on experience with freeze-frame technology by teaching several telecommunications credit courses from Madison to graduate students in the Interactive Telecommunications Program at New York University.

This learning experience, combined with user surveys and hardware investigation, convinced us and other UW-Extension faculty that freeze-frame technology met our needs and resources.

Project Implementation

Two major equipment requirements surfaced during our investigations. We established the need for a resolution of 256 x 256 with 64 grey levels, allowing a visual to be transmitted in 35 seconds over a voice grade channel. Instructors also wanted a two-frame memory system to facilitate the smooth flow of information. With this feature, an instructor could "program" the visuals: one visual could be sent and stored in memory at each site while participants viewed and discussed another. With the push of a button the stored image could then appear instantly on monitors at all sites.

Colorado Video, Inc., Boulder, Colorado, was the successful bidder for the freeze-frame equipment and was awarded the contract in Spring 1982. Other contracts for monitors, carts, cameras, slide projectors, etc., were also awarded then.

Our goal was to have the freeze-frame equipment ready for programs by September 1982. Ideally, we would have had a semester to experiment with the hardware and train users. Instead, we had less than two months between installation and actual use.

The SEEN programming year began September 1st, with 25 courses scheduled and promoted for first semester. Rather than having both the electrowriter and freeze-frame equipment up simultaneously during first semester, we removed and permanently retired the old equipment in Summer 1982 as we installed the new.

Freeze-Frame Equipment

Twenty-six SEEN locations are now outfitted with freeze-frame equipment. Each location has two 23-inch black and white television monitors on audio-visual carts, an audio unit and microphones, and a Colorado video Transceiver 250 which is locked in one cart. When participants arrive at a SEEN site, they simply turn on one on/off equipment switch, if an aide has not already turned on the equipment.

Courses can originate from any network site, using one of seven transportable instructor tables. Two of these tables are dedicated to studios in our Radio Hall headquarters. The others are moved each semester depending on programming needs. During 1982-83 for example, programs originated from UW System campuses in Milwaukee, West Bend, Whitewater, Superior and Eau Claire.

Each transmit table features several closed-circuit television cameras — one to focus on a head and shoulders picture of the instructor, another to focus on graphics or objects, and another to focus on that site's audience. Another visual resource available on the table is a 35 mm slide projector.

An instructor selects the desired visual resource and then has two basic options for sending a picture — one requiring 35 seconds for the image to develop from left to right onto the TV monitor at each site, or the memory system which allows one to talk about and view a visual while sending another into memory at each site. The latter means that an instructor can instantaneously switch between two stored pictures.

In addition to a video switcher panel and a remote control box, the table also includes three 9-inch monitors. One previews graphics, one previews graphics and any other outgoing visuals, and the third is a network monitor. Instructors wear a lavalier microphone.

Site equipment is standardized, with only two exceptions. A Colorado Video Digital Disc Image Storage System 930 is currently available only at the Madison headquarters. The system allows the storage of up to 242 different visuals onto a hard disc, controlled by an Apple computer. By storing visuals before their program, instructors cut down on the amount of camera switching, focusing and manipulation of visual materials they need to do during the actual program. An instructor simply uses forward and reverse controls to bring the visual up on a preview monitor, and then transmits it to all sites.

The other equipment exception is a large screen video projection system used in one Madison studio. Both audio and video signals from all programs are recorded on standard audio cassette tape for replay needs. Programs can also include pretaped audio and video segments, followed by discussion.

SEEN Freeze-Frame Programs

Nearly 50 different courses were offered on freeze-frame during the 1982-83 programming year to more than 2,000 participants. Most were non-credit continuing education courses in engineering, small business, history, communication, music and environmental resources. Two undergraduate credit courses were offered in engineering; one undergrad/graduate course was offered in music.

One of the courses, an eight-week session on "Aviation Weather," linked more than 170 pilots gathered at 23 SEEN classrooms. Forty percent of all fatal accidents in aviation are generally related to weather, and the course was aimed at giving pilots a better chance for survival. The video medium of freeze-frame helped meet that goal.

The half-dozen guest instructors made full use of the freeze-frame system, using pictures of cloud formations, air masses, satellite transmissions, charts and text outlines to supplement their presentations and audience discussion. The graphics camera also gave the instructors the flexibility of answering questions with illustrations of maps or photographs from a textbook.

A good example of a freeze-frame credit offering was a course on "Engineering Mechanics." The three-credit undergraduate course originated from the UW Center at West Bend and reached 70 Center System freshmen and sophomores each semester. Freeze-frame facilitated presentation of equations and diagrams and also problem-solving activities. A further dimension of the course was optional tutorials held via the system twice a week.

User Training and Reactions

At ICS, we have always placed a high value on the importance of user training. This is true no matter what the hardware or transmission system. Freeze-frame was a large-scale project, if only in the area of instructor training!

Some of those who taught on the system this past year had used the electrowriter. Others had only audio teleconferencing experience. Still others had no teleconferencing experience. Some were Extension or campus faculty while many others were hired as ad hoc instructors from other state agencies or the private sector. Many were based in Madison, but some were as far away as Superior. Some were responsible for one two-hour "guest" slot. Others were the sole instructors for credit courses.

Our training approach consists of: print materials, one-on-one orientation to the equipment and designing visuals, hands-on practice sessions, and visual workshops.

Print materials include an overview of the system, plus detailed information on how to design good visuals. The focus here is on the visual criteria of shape, amount of information, legibility and contrast. Other visual guidelines, as well as step-by-step instructions on how to operate the instructor's transmit table, are also distributed.

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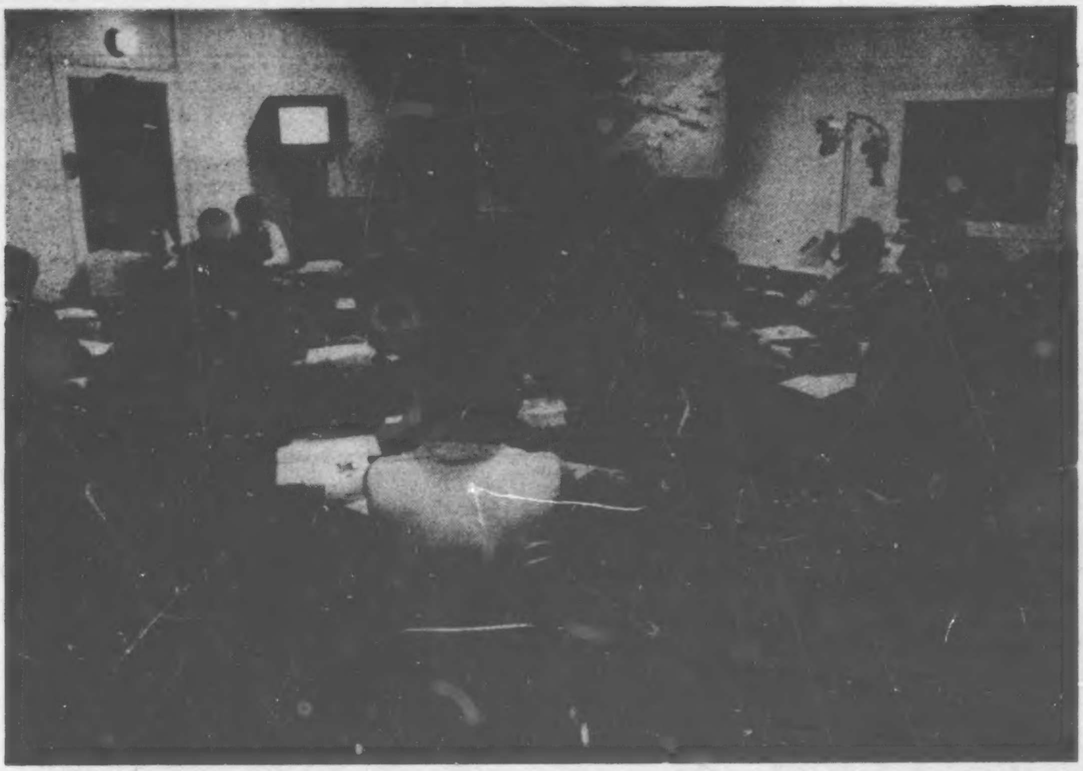
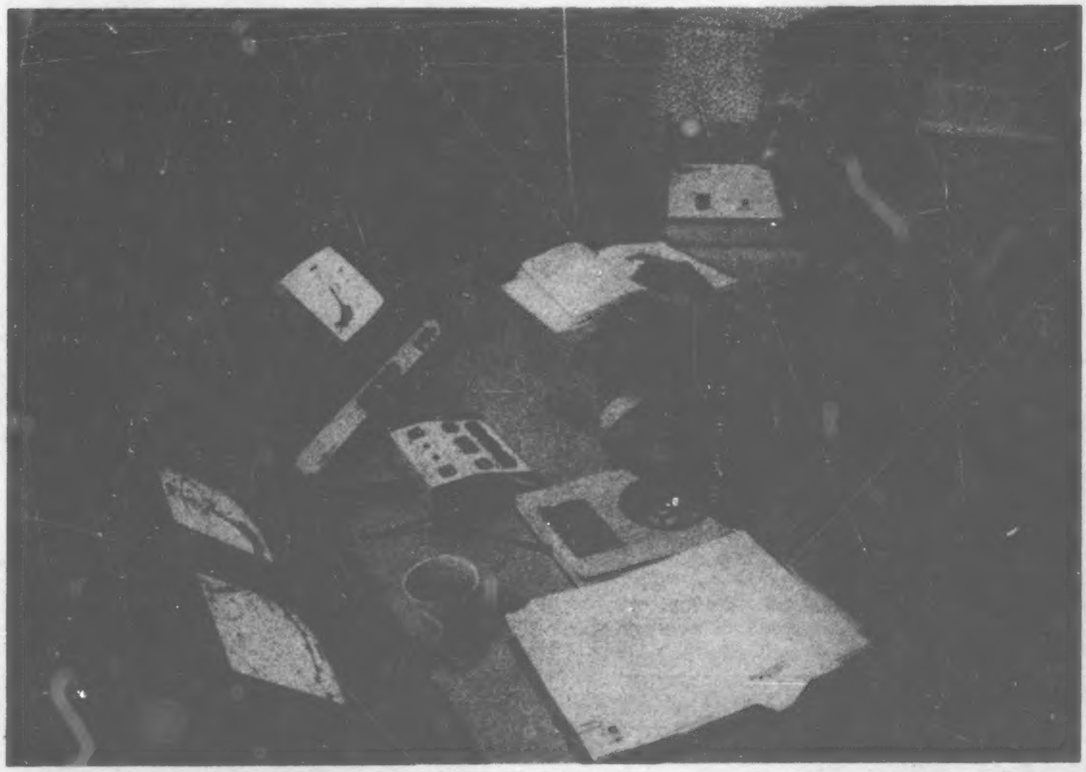


SEEN instructors can originate programs from any of the 26 statewide sites using a freeze-frame transmit table.



Freeze-frame is a versatile visual system, allowing instructors to transmit photographs, drawings, slides, or hand-drawn graphics to classrooms around the state.

73

Once instructors have attended a visual workshop, they are scheduled for a one-on-one orientation to the equipment and consultation regarding their visuals. Practice sessions are strongly encouraged.

Instructor reaction to the flexibility of freeze-frame has been positive. Instructors responsible for only a one or two hour SEEN segment have provided us the most challenge in regard to the design of our transmit table and operation. Efforts are now underway to modify some of the instructor control buttons to simplify operation.

Feedback from some participants indicates the need for more and better designed visuals. The number of visuals used during a freeze-frame session varies considerably with the personal teaching style and visual resources of the instructor, as well as the content detail of each visual. One 90-minute session, for example, used 60 visuals. Other sessions of the same length have used as few as 15 visuals. Our general recommendation for most continuing education sessions is one visual every one to two minutes.

To stretch instructor's thinking about visuals and to encourage preparation of better visuals, we have developed and held several visual workshops. These face-to-face small group sessions include a sample tape of successful freeze-frame visuals, an interview with an instructor and discussion about the four visual criteria.

Local Site Support

Support at each of the teleconferencing locations is critical to the operation of SEEN. Most of this support comes from UW-Extension or UW campus personnel who perform these administrative duties in addition to other full-time jobs. The staff also provides valuable assistance in troubleshooting audio and freeze-frame equipment. Defective audio equipment is returned to ICS and a replacement is sent out via UPS the same day trouble is reported. An ICS technician from Madison will exchange any video equipment that needs repair.

Summary

Freeze-frame has added an important new dimension for UW-Extension outreach. Our goals during the next year will be to increase awareness and use of the system. Further goals are to refine some controls on the instructor's transmit table, continue to improve user training approaches and materials, and analyze course evaluations.

Case Continued

Like many of you I am concerned about what is happening to the psychoculture of our profession. Are we willing to teach those matters and issues that will affect the survival and self-reliance of future Generations? Do we have the courage? Are we willing to be a profession that is not anti-intellectual? Are we willing to protect the rights of future generations? Thank you.

[1] NICHOLAS ROBINSON "Global 2000 and then some," **Sierra Magazine,** (May/June): 48-49.

[2] JAMES W. BOTKIN, MAHOLI ELMANDJRA, and MINCEA MALITZA **No Limits To Learning: Bridging the Human Gap,** New York; Pergamon Press, 1979), PP XIII and 10.

[3] DANIEL YANKELOVICH **New Roles: Searching for Self-Fulfillment in a World Turned Upside Down,** N.Y. Random House, 1981.

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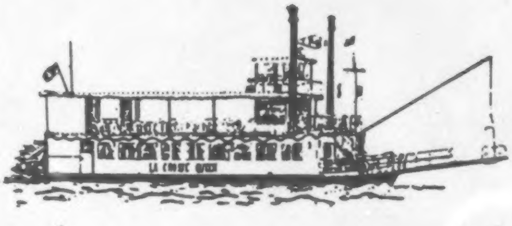

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Computer Education in Appleton

by Jim Klein
Director of Media Services
Appleton Area School District
Appleton, Wisconsin

For several years, the Appleton Area School District has successfully utilized computer technology in the administrative operation of the school system. More recently, experimentation with the use of computers within the instructional program has been initiated largely through pilot projects funded through Elementary Secondary Education Act (ESEA) Title IV. Most of these early endeavors, however, involved only one or two schools or the central administration. during the past year, four events occurred which committed the district to a computer implementation plan that will have a significant impact on all schools of the district. The events were: (1) The development of a computer proposal by a Board-appointed citizen study committee, (2) the development of a computer proposal by a committee of teachers and administrators from within the district, (3) the development of an Education Consolidation Improvement Act (ECIA-81 Chapter 2) proposal for a computer training program for teachers, and finally, (4) the acceptance of the proposals by the administration and Board of Education.

In the development of the computer plans, the two computer planning committees adopted somewhat different strategies. Members of the citizen computer planning committee spent many hours familiarizing themselves with present computer utilization in the district by taking trips to the schools and visiting with teachers, administrators, students and parents. The in-house educator computer committee began their work by developing an educational rationale for the use of computers within the instructional program. In October of 1982, the rationale was completed. Two basic objectives were identified: (1) computer literacy in which the computer itself is the object of instruction, and (2) computer assisted instruction in which the computer is the medium of instruction. To enlarge a bit on the objectives, the committee report stated that "the Computer committee of the Appleton Area School District believes that computer literacy is an essential outcome of contemporary education. Broadly defined, computer literacy is an awareness of the capabilities and limitations of computers and their applications in today's society coupled with a basic, functional knowledge of how computers operate and can be utilized in problem-solving situations. Computer literacy instruction for students may be viewed as a continuum with awareness and exposure at one end and advanced programming in multiple languages at the other end. Perhaps not all students need programming experiences in multiple languages, but it is essential that all students have at least some meaningful exposure to and experience in using a computer."

Relative to computer assisted instruction, the rationale document noted that "in addition to literacy, the computer may be successfully employed as a medium of instruction for individualized and group drill, remediation, problem-solving, simulation and learning reinforcement tasks. This use is commonly referred to as computer assisted instruction (CAI) which can be defined as the use of the computer to help present instruction and/or to interact with the student to enhance learning. The computer used in conjunction with the wealth of new instructional software provides an effective, interactive teaching/learning system that can also be used by the teacher to monitor and evaluate individual and group progress."

The rationale document also recommended a 3-4 week computer literacy unit for all secondary students, computer labs at the high school level for the math/science and business education departments, personal computer work stations in the IMCs and other instructional support areas, a programming course at the high school level, and an in-service training program for all teachers.

With the rationale statement finished, both committees began the task of formulating a workable and realistic computer implementation plan. In November, a joint meeting was held so that each committee could give a progress report to the other group. The citizen committee discussed the rationale document and eventually incorporated it into their plan. After the November meeting, the committees each worked as separate entities in developing their respective plans. By early December, the citizen committee plan was completed and submitted to the Appleton Board of Education, and just prior to the Christmas break, the educator committee plan was likewise finished and submitted for possible approval.

Except for one area, the two plans complimented each other very well. The citizen committee plan recommended that the district lease main-frame computer services for administrative purposes, and the educator committee plan called for a continuation of the district's main-frame lease with Fox Valley Technical Institute in Appleton. The citizen committee plan recommended the purchase of an established microcomputer system for K-12 instructional use and one with a high availability of CAI software. The educator committee recommended the new Apple //e for the initial purchase (January, 1983), but noted that future purchases should be based on a thorough evaluation of other micro systems as well. Both groups recommended that an additional programmer be employed to assist the district's systems analyst with his extensive programming tasks. Noting that the current district-wide inventory included only 38 microcomputers and 4 computer terminals, the educator committee plan called for the purchase of an additional 119 microcomputer systems and 21 main-frame terminals by the fall of 1985 at a cost of $264,000. Funds for this purpose would come from Chapter 2 and the local school budget. The citizen committee plan did not specify numbers of computers needed, but did indicate that a significant number would be needed in the near future, and included a dollar figure in their plan that came very close to the funding required to purchase the micros and terminals recommended in the educator plan. Several other items too numerous to note in this article were recommended by the two computer proposals.

There was, however, one major area where the two plans did not agree. This dealt with the question of who shall coordinate the administrative and instructional computer program for the Appleton Area School District. The citizen group recommended that the district employ a data processing manager to coordinate all computer operations. The educator committee recommended that a small steering committee of present district personnel coordinate all administrative and instructional computing functions. There was a clear-cut split on this question between the committees. In March of 1983, the Board of Education approved a computer implementation plan for the school system incorporating all of the elements recommended in the two proposals submitted to them in December. The Board was unable, however, to resolve the coordination question at this time. Because the school system's administrative structure is due for an evaluation by a consulting team in the very near future, the question of computer coordination was referred for possible resolution to that administrative review study.

The last piece in the story relates to the school system's ECIA-81, Chapter 2 Project. Working at the same time as the two computer planning committees, the Appleton Area School District's Chapter 2 Coordinating committee searched for a means to assess the instructional needs of the students in the private and public schools in Appleton. The committee, composed of teachers and administrators from public and parochial schools along with parent representatives, decided to design a comprehensive needs survey to be sent to all teachers and administrators in Appleton (about 800 persons) plus 10% of the parents (about 1,000 persons) randomly selected school-by-school. The survey instrument proved difficult to design, because of the diverse nature of the Chapter 2 program which consolidated 28 separate federal programs into one program while retaining the objectives and guidelines of the former programs. Eventually, the committee selected 17 items (activities/programs) to be rated on the survey. Participants were first asked to record their perceptions about the current status of the 17 activities/programs in the survey. The programs were to be rated as strong, adequate, inadequate, or don't know. After that, the survey participants were asked to record the degree of emphasis desired in the future compared to the present. The choices on this section were more emphasis, same emphasis, less emphasis or don't know. when the results were all tabulated, it was found, much to the surprise of the committee, that the item entitled **computer literacy and/or computer assisted instruction program** was the one checked most often by **both** parents and teachers as "in need of greater emphasis in the future." In fact, no other activity/program even came close. With this clear-cut mandate, the committee proceeded to earmark all Chapter 2 funds for computer education.

In the first year plan for Chapter 2, 80% of the funds were set aside for the purchase of computer hardware, and in January of 1983 twenty Apple //e microcomputer systems (computer, monitor, disk drive and printer) were purchased. Ten of the systems were placed in elementary schools which had no computers, and ten were placed in a temporary teacher training laboratory in the central administration building. The remaining 20% of the funds were utilized to employ computer instructors and student tutors to provide computer training for the professional staff members of the Appleton Area School District and five participating parochial schools. The Spring, 1983 courses and workshops offered included the following offerings as well as provisions for open lab time for classes and individuals:

6 sections — **Beginning Computer Literacy Course**

2 sections — **Word Processing With A Microcomputer**

3 sections — **Microcomputer Workshop**

1 section — **Technical Seminar on Microcomputers**

1 section — **Computeronics Workshop**

These computer courses have proven to be very popular with teachers and administrators. For the first courses/workshops offered, nearly 500 applications were received, and many teachers had to wait. Next year more courses will be offered since the program will start immediately in the fall and utilize the entire school year. This tremendous response has been most gratifying to the members of the chapter 2 committee, as they look to the planning of next year's teacher training program.

In conclusion, though the work of the past 18 months has been most productive, much remains to be done. The question regarding the overall coordination of the computer program is still unresolved. Many curricular concerns have yet to be addressed as the system grapples with the numerous questions of how computers will mesh with and integrate into the various K-12 curricular areas. Questions remain relative to the fast-changing technology itself. At this point in time, the district has purchased only Apple microcomputers. Some district personnel feel the system should purchase less sophisticated and less expensive equipment for the elementary levels, and perhaps more sophisticated units at the secondary level; others have recommended that the district buy and utilize several different microcomputers, and so on. All in all, the work of the three committees detailed above, coupled with the encouragement and support of the administration and Board of Education, has given the Appleton Area School District a solid foundation on which to build an effective and comprehensive K-12 computer education program.

Krenz Continued

In order to proceed with the SWLS contract for processing services suggested funding could be drawn from these sources:

(a) Local processing supplies could be cut a possible	$200.00-$300.00
(b) catalog card sets would no longer be purchased from Baker & Taylor and BroDart at a saving of	1,400.00
(c) OCLC charges would stop and would save us	3,000.00
(d) Postage charges would be cut	200.00
(e) More efficient use of staff time would be made (those who were involved in some of the processing steps at 64-72 hours per week)	4,817.68

We settled on this SWLS cooperative proposal since it seems an even better plan than was the UW-P arrangement. By contracting with SWLS for acquisition and cataloging and processing services, the school district hopes to realize a wealth of benefits. Not only have we by-passed the large expense of setting up our own cataloging and processing center, but we have also gained many other advantages. In the future, OCLC cataloging will be available to us as will original cataloging performed by the SWLS professional cataloger. Ordering of items will accomplish a greater discount and will be placed more often, every 1st and 15th of the month instead of more infrequent large orders tendered with the idea of receiving discounts. There will be fewer supplies to purchase for local processing (cards, pockets, labels). Tailored options are given, e.g.; placement of pockets, re-enforced paperbacks. A faster turn around time from ordering to placing on shelf (4-6 weeks) is promised. SWLS will furnish order cards. We will not have to dig into the book or audio visual budget for postage charges and catalog card orders. The most important advantage is that there will be time for media staff to work directly and creatively with students and teachers, time that will afford us the opportunity to meet many of those challenges which we had to postpone due to lack of time.

Although Platteville Public Schools is ending its OCLC cataloging venture with UW-P, it has been a most rewarding experience and will undoubtedly open the way for other cooperative projects. The experience of working closely with a neighboring academic library willing to assist us to learn the mysteries of computer access was invaluable. Our new cooperative arrangement with SWLS will provide us not only with OCLC cataloging but will also give us acquisition capability and processing sevices.

All Wisconsin schools do exist within a public library system like the one at Fennimore.* It may well pay to inquire whether your district might be able to effect a cooperative agreement within the framework of a school district working with the public library system. I am confident that through communication, understanding and cooperation more school districts will be able to meet the challenge of making their building and district media staff and program not only more cost effective but also more educationally effective.

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*The Janesville Public Schools and the Arrowhead System spearheaded this cooperative effort on the part of a school district and a public library system.

Bondurant Continued

by NASA scientists and engineers, films and publications, teacher workshops, and astronaut visits. CIPs are very comprehensive programs. Lewis conducts only one CIP a year in our six state area. During a recent CIP in Minnesota almost 65,000 students were given a lecture-demonstration by the aerospace education specialists as part of the CIP program.

Exhibits can be borrowed for use in special programs or events. Lewis has 14 exhibits for loan that describe NASA research activities and programs. In addition, arrangements can be made to borrow a lunar sample for display. However, security has to be provided by the requestor to ensure the safety of the traveling exhibit lunar sample. The Lewis Research Center is putting together a new "The Lewis Photographic Traveling Exhibit." This exhibit will include between 50-100 of the Photo lab's best photographs taken over the past 41 years. If the reader knows of any museum or other appropriate facility that might like to display the photo collection, please have them contact the ESO Office.

Spacemobile visits have proven to be one of our most popular services to educators. Currently, two aerospace education specialists travel our six state region giving presentations, visiting classrooms, and doing inservice programs. During the lecture-demonstrations NASA's activities — past present, and future — are highlighted. From time to time the lecturers also do lunar sample briefings. (Arrangements can be made by a teacher to become certified to use lunar samples returned from the moon during the Apollo program in his/her classrooms.)

Educational Research To date several graduate students have done dissertations on topics related to ESO programs. A reader who might have an idea for an educational research project should contact the Lewis ESO Office. It may be that the Lewis ESO can furnish some support for the study.

NASA Headquarters Educational Services

There are a few other NASA services available to educators, but these must be scheduled through NASA Headquarters. There is the College Lecturers on Aeronautics and Space Science (CLASS) project which is targeted for college and university engineering and science students. The purpose of CLASS is to bring a better understanding of NASA's research and development activities to the college students.

Also, there is the Aeronauticsmobile Program in which an aeronautics specialist visits educational institutions and aviation classes to discuss NASA' research efforts and achievements in aeronautics.

Another recent program initiated by NASA's Headquarters ESO is the Urban Community Enrichment Program which gives urban youth and teachers the opportunity to do space learning activities. This program can last for several months in one community.

As reported, the services to educators are many and varied. If you have other ideas as to how NASA can serve educators in ways not described here, please forward your comments to: Chief, Educational Services Office, MS 6-3, NASA Lewis Research Center, Cleveland, Ohio 44135.

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